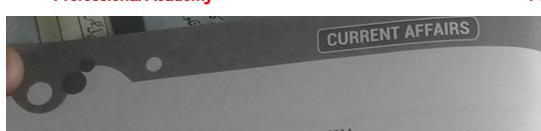
# Dogger Publisher PPSC And NTS TEST MASTER

MCQS

With key



Muhammad.

Pakistani jets attack suspected militant hide-outs January 22, 2014 in North Waziristan for first time in years, signaling government's willingness to take fight to center of country's insurgency; air strikes appear to be in retaliation for recent terrorist bombings in Bannu and in Rawalpindi that killed at least 30 security force members.

luicide bomber strikes near the Pakistani January 21, 2014 military's general headquarters in Rawalpindi, villing at least 13 people, including six soldiers.

Bomb explodes inside vehicle at Pakistani military compound in the country's northwest, killing at east 20 members of a paramilitary unit and younding 30 more.

January 11, 2014

Pakistan's Prime Min Nawaz Sharif recommends hat a high civil award for bravery be bestowed on itzaz Hasan, teenager who was killed while topping a suicide bomber from attacking his thool in northwestern Pakistan.

cident in which 15-year-old Pakistani student Izaz Hasan tackled suicide bomber while on his ray to school, only to be blown up by him, has truck deep nerve in Pakistan; citizens are calling rsan a hero, pointing out that he gave his own life save that of hundreds of students.

uhammad Aslam Khan, Pakistani police official own as Chaudhry Aslam who was at forefront of erations against the Pakistani Taliban, is killed omb blast in Karachi along with two others

Special court panel examines medical report on former Pakistani military ruler Pervez Musharraf to determine whether he may be excused from attending treason proceedings against him. Musharraf was rushed to military hospital for sudden heart problem on Jan 3; deliberations raise speculation that deal to allow him to leave country may be underway.

Dubai Journal; news that Pakistan and Afghanistan cast their votes for cities other than Dubai in the competition for the 2020 World Expo infuriates the United Arab Emirates; Dubai has won the competition, which offers the city a chance to grab global attention and celebrate its resurgent affluence.

Former Pakistani military ruler Pervez Musharraf is taken to a military hospital due to an unexplained heard condition, derailing for third time a scheduled court hearing in treason proceedings against him.

Explosives are found for second time along route to hearing for Pakistan's former military ruler Pervez Musharraf; he is accused of subverting the Constitution when he imposed emergency rule in November 2007; judge warns if he fails to appear for next hearing he could face arrest.

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Computer Science

Solved Model Paper of Computer Science for the post of (SESE)

### INSTRUCTIONS

- Candidates must read and follow instructions given on reverse of the answer sheet before attempting the question paper.
- All answers are required to be written on the answer sheet and NOT on the question paper.
- Attempt all questions which carry equal marks.

Time allowed:

2 hours (120 mints)

Total MCO's: 100

Total Marks: 100

Subject Related MCQs = 85

Consider the following code Intz, x=5,y=-10,a=4,b=2; z = x++--y\*b/a;

What number will z in the sample code above contain?

B. 6

C. 10

> Ans: C. 10

D. 15

What function will read a specified number of elements from a file?

A. fileread() B. getline()

D. fread()

C. readfile()

Ans: D. fread()

What will the above sample code produce when executed?

A. 0, 0, 1, 2, 3, 4,

B. 1, 2, 3, 4, 5, 5,

C. 4, 3, 2, 1, 0, 0,

D. 0, 1, 2, 3, 4, 5, Ans: A. 0, 0, 1, 2, 3, 4,

4. Consider the following code and what will be printed when the sample code below is executed? int x = 0;

for (x=1; x<4; x++);printf("x=%d\n", x);

A. x=0

B. x=1

D. x=4

5. inttestarray  $[3][2][2] = \{1, 2, 3, 4, 5,$ 6, 7, 8, 9, 10, 11, 12}; What value does testarray[2][1][0] in the sample code above contain? A. 3 B. 5

C. 7

D. 11

> Ans: D. 11

6. Which one of the following will read a character from the keyboard and will store it in the variable c?

A. c = getc(); B. getc(&c);

C. getchar(&c) D. c= getchar();

> Ans: D. c = getchar();

What will be output when the following code is executed int  $y[4] = \{6, 7, 8, 9\};$ int \*ptr = y + 2; printf("%d\n", ptr[ 1 ] ); /\*ptr+1 == ptr[1]\*/

B. 10 C. 9 D. 7

> Ans: C. 9

8. Which of the following strategic issues need to be addressed in a successful software testing process?

A. Conduct formal technical reviews prior to testing

	228 Computer Science
Dogar Testmaster	C. Declaring overridden methods
a -iG, physical design in a	as non-virtual
	None of the above
dependent test featilis	> Ans: D. None of the above
D. None of the above  Ans: A. Conduct formal technical reviews prior to	13. Which one of the following provides conceptual support for function calls?  A. The data segment
testing	B The system stack
9. If there is a need to see output as soon as possible, what function will force the output from the buffer into	D. The text segment  Ans: B. The system stack
the out0.put stream?  A. flush() B. output()  C. fflush() D. dump()  Ans: A. flush()  10. The property that determines the	15. C is which kind of language?  A. Machine B. Procedural C. Object-oriented D. Assembly  Ans: B. Procedural
order in which a control receives	15. The concept of hierarchical
focus is:	classification is related to
A. Tab Order.	A. Abstraction
B. Tab Sequence.	B. Inheritance
C. Tab Index.	C Function overloading
a . Order	D. None of the above
D. Son Order.  > Ans: C. Tab Index.	> Ans: B. Inheritance
which one of the following	the use of encapsulation a user
	can obtained
representation from a pointer to	r Compation hiding
time t value?	+ interdependencies amon
A. Limed	
B. get time	classes
C. string time	C. Implementation independence among modules
None of the above	among area ontions
	D. All of given options
12. Which of the following causes run	> Ans: Information hiding
time binding?	17. with no using Deep copy
A. Declaring object of abstract	constructor
class	A. System crash problem will
MITHAMMAD IODAL SESE SC	TENIOE2 A. System ordan p

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		B. Memory Leakage problem will
		occur.
		C. Dangling pointer problem will
		occur.
		D. All of the above.
		> Ans: All of the above.
	18.	Which of the following are valid
		characters for a numeric literal constant?
		A. A comma
		B. dollar sign (\$)
		C. A percent sign (%)
		D. None of the above
		> Ans: D. None of the above
	19.	Choose one of the following
		A. Struct is encapsulation
		B. Class is encapsulation
1		C. Functions is hiding the
		parameters.
		D. None of the above
		> Ans: B. Class is encapsulation
	20.	
		measure the efficiency of an
		algorithm are .
		A. Processor and C.P.U,
		B. complexity and integrity,
		C. Time and space,
		D. Data and space,
		> Ans: C. Time and space
	21	All of the following cases exist in
		complexity theory except
		A. Best case B. worst case
		C. None case D. Null case
		> Ans: D. Null case
	22.	Which of the following is the
		complexity of bubble sort algorithm?
		A. O(n) B. O(log 2)
		C. $O(n^2)$ D. $O(n \log n)$
		➤ Ans: C. O(n²)
		Aus. C. O(II)
	_ I A	and a district

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2	4. According to the standard C
	specification, what are the respective
	minum Sizes (in hydre) a cat
	rollowing three data tupos: short
	The state of the s
	A. 1,2,2 B. 1,2,4
	C. 1, 2, 8 D 2 2 4
	Ans: D. 2, 2, 4
	24. The second name of two
	dimensional arrays is
	A. Table arrays B. Serial arrays
	C. Both of above D. All of above
	Ans: C. Both of above
	27. What are two predefined FILE
	pointers in C?
	A. stdout and stdin
	B. console and error
	C. stdip and stderror
	D. None of the above
	Ans: D. None of the above
1	
١	26. The "push" and "pop" is correlated
١	to which of the given?
١	A. Array
1	B. lists C. Stacks
١	D. None of above
١	Ans: C. Stacks
١	Alis. C. Stacks
ı	27. Which of the following option is a
	data structure which is linear?
	A. String B. List
	C. Queue D. All of above
	> Ans: D. All of above
	28. Which one of the following is NOT
	a valid identifier?
	2.1
	C. bigNumber D. g42277

Ans: B. auto

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29. The ABEL notation equivalent to Boolean expression A+B is A. A & B B. A!B C. A # B D. None of the above Ans: C. A # B  30. If a cache access requires one clock cycle and handling cache misses stalls theprocessor for an additional five cycles, which of the following cache hit ratescomes closest to achieve an average memory access of 2 cycles? A. 75 B. 80 C. 83 D. 86 Ans: B. 80  31. A template argument is preceded by the keyword A. Public B. Class C. Vector D. Private  Ans: C. Vector  32. With multiplexer as parallel to serial converter requires A. A parallel to serial converter circuit connected to the multiplexer B. A counter circuit connected to the multiplexer C. A BCD to decimal decoder connected to the multiplexer D. A 2-to-8 bit decoder connected to the multiplexer Ans: A. A parallel to serial converter circuit connected to the multiplexer Ans: A. A parallel to serial converter circuit connected to the multiplexer  Ans: A. A parallel to serial converter circuit connected to the multiplexer  Ans: A. A parallel to serial converter circuit connected to the multiplexer  Ans: A. A parallel to serial converter circuit connected to the multiplexer  Ans: A. A parallel to serial converter circuit connected to the multiplexer  Ans: A. A parallel to serial converter circuit connected to the multiplexer  Ans: A. A parallel to serial converter circuit connected to the multiplexer  Ans: A. B parallel to serial converter circuit connected to the multiplexer  Ans: A. A parallel to serial converter circuit connected to the multiplexer	34. Operating system provides the services of A. I/O handling. B. program execution C. Communication D. All of the above Ans: D. All of the above Ans: D. All of the above  35. While computer is turned on or restarted, a special type of absolute loader isexecuted; identify the name of loader? A. Init boot loader B. boot loader C. Relating loader D. Bootstrap loader Ans: D. Bootstrap loader  36. Which option is used in operating system to separate mechanism? A. Two level implantation B. Multilevel implantation C. Single level implementation D. Hierarchal implementation D. Hierarchal implementation  37. Which is not included in the process state while executing single process? A. Terminated B. running C. Block D. Ready Ans: C. Block  38. Which of the following statement is true about non-preemptive scheduling? A. A process switching from running state B. A process switching from running state C. A process switching from waiting to ready state D. A process switching from new to ready state	Ans: A. A process switching from running state to the waiting state  39. What do databases and DBMSs directly support? A. OLDP B. OLTP C. Databases D. Operational databases Ans: B. OLTP  40. What file access method allows the user to directly access records organizedsequentially using an index of key fields? A. Sequential access method B. Indexed sequential access method C. Direct access method D. Relational access method D. Relational access method Ans: B. Indexed sequential access method Ans: B. Indexed sequential access method Ans: B. Indexed sequential access method Ans: B. None of the above Ans: D. None of the above Ans: D. None of the above  42. Which of the following statement is true about a data dictionary? A. It is a two-dimensional table used to store data within a relational database. B. It is a multi-dimensional table used to store data within a relational database. C. It is storage area where data about data is stored	D. It is a two-dimensional table used to store data within a database.  Ans: C. It is storage area where data about data is stored  43. Which of the following option is best indication about generic programming?  A. Reusability  B. Adaptability C. Compatibility D. None of the above  Ans: A. Reusability  44. The logical structure of information in a database is contained in the A. Data manipulation system B. Data administration subsystem C. Data definition subsystem D. Data dictionary  Ans: D. Data dictionary  45. The type which is used to declare a pointer is called its A. Public type B. Private type C. Default type D. Reference type  46. Which of the following try block to catch the object thrown? A. Throw block B. Object block C. Catch block D. Try block  Ans: C. Catch block  47. Requirements validation review is conducted by A. Testing the system model B. Have the customer look over the requirements C. The software requirement team D. Use a checklist of questions to examine each requirement

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Ans: D. Use a checklist of questions to examine each requirement  48. User interface development systems provide some mechanisms for buildinginterface prototypes including  A. Black box testing  B. Software engineering tools  C. Input validation  D. None of the above  Ans: C. Input validation  49. Which of the following is true about many of the tasks from the generic tasksets for analysis modelling and design?  A. Can be conducted in sequential way.  B. Can be conducted in parallel with one another.  C. Is the most difficult task of the system engineering?  D. None of the above.  Ans: B. Can be conducted in parallel with one another.  50. The sharing of a medium and its link by two or more than two devices is called  A. Modulation  B. De-multiplexing  C. Line discipline  D. Multiplexing  None of OSI model is used to oover the specifications of transmissionmedia?  A. Session Layer  B. network layer  C. Physical layer	52. What is an encapsulation? A. An action or occurrence such as click B. A package of one or more components together C. A set of statements that performs specific task on static objects. D. A reference type variable which cannot dereference. Ans: B. A package of one or more components together  53. Which of the following error detection method uses one's complement? A. Even parity check B. Odd parity check C. Checksum D. Cyclic Redundancy Check Ans: C. Checksum  54. A technique which restrict the amount of data that the sender can send beforewaiting for acknowledgment. A. Flow control B. multiplexing C. Data rate D. Error control > Ans: A. Flow control  55. Which of the IEEE specifications is used for wireless LAN which covers thephysical and data link layer of OSI reference model A. IEEE 802.3 B. IEEE 802.11 D. IEEE 802.3.5 Ans: C. IEEE 802.11  56. Process's state after facing an I/O instruction is called	B. Blocked/Waiting C. Idle D. terminated Ans: B. Blocked/Waiting  57. Which of the following is an example of analog technique? A. FDM B. WDM C. ACM Ans: A. FDM  58. Another name of data in a class is A. Objects B. Fields C. Access identifier D. Instance Ans: B. Fields  59. A register which is used to keep track of address of the memory location? A. Address Register B. Data Register C. Instruction Register D. Program Counter Ans: D. Program Counter Ans: D. Program Counter  60. A time sharing system involve A. More than one program in memory C. More than one memory in the system D. All of above Ans: B. More than one program in memory  61. The address of the instruction following the CALL instructions stored in/onthe when a subroutine is called is A. Stack pointer B. adder C. Program counter	D. Stack  Ans: D. Stack  Ans: D. Stack  Ans: D. Stack  62. The ALU and control unit of microcomputers are combined on a single silicon chip, called?  A. Minichip  B. microprocessor  C. ALU  D. CU  Ans: B. Microprocessor  63. Which of the following statement is true about ANSI SQL?  A. Serializable isolation level will allow phantom reads and easy access.  B. Serializeableisolation level will not allow phantom reads, dirty reads, and no repeatable reads.  C. Serializeable isolation level will allow phantom reads  D. Serializeableisolation level will not allow dirty reads, and no repeatable reads.  Ans: B. Serializeableisolation level will not allow dirty reads, and no repeatable reads.  Ans: B. Serializeableisolation level will not allow phantom reads, dirty reads, and no repeatable reads.  64. The address space in ARM is  A. 2^24 B. 2^64 C. 2^16 D. 2^32  Ans: D. 2^32  Ans: D. 2^32  Ans: D. 2^32  Ans: D. 2^a20  65. The addressing mode where the EA of the operand is the contents of Rn is  A. Pre-indexed mode  B. Pre-indexed mode  C. Post-indexed mode  D. None of the above	
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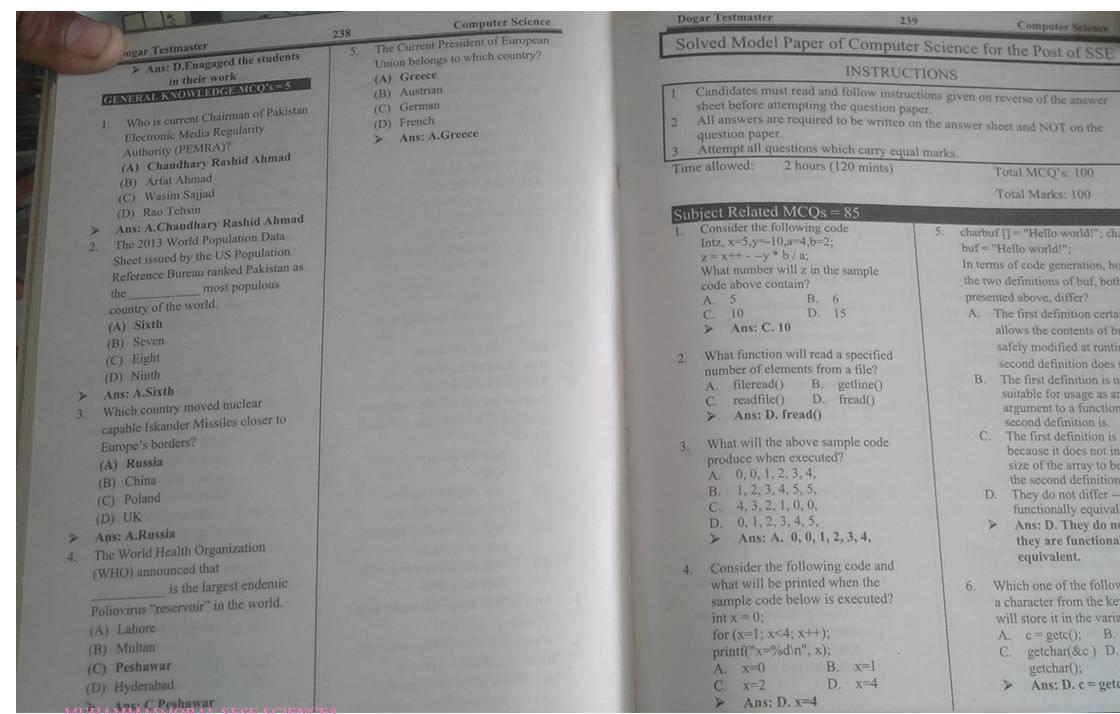
			Computer Science
Peggy Testmaster	THE OWNER WHEN PERSON NAMED IN	Which of th	The state of the s
Dogar Testmaster  Ans: C. Post-indexed mode  66. The CPU is also called as A. Processor hub B. ISP C. Controller D. All of the above Ans: B. ISP  67. If L1 and L2 are regular languages; then which of the following are also regularlanguage(s). A. L1 + L2 B. IL2 C. L1* D. All of above  68. Instantiation is the moment that A. Memory is de-allocated for a specific object of a class. B. Memory is allocated for a specific object, which is a member of a class. C. A program which has static variables. D. A memory is allocated for a specific object of a class.  D. A memory is allocated for a specific object of a class.  Ans: D. A memory is allocated for a specific object of a class.  Ans: D. A memory is allocated for a specific object of a class.  69. If 99% portion of a program is written in FORTRAN programming language and the remaining 1% portion of the program in assembly language the percentage raise in the specific on time,	71. T F A h A B C D T 72. T G T F F F F F F F F F F F F F F F F F	null able produce  → A.  B. A produce → B.  C. A produce → N.  D. A produce → N.  Ans: A null all the form  C=A+B+C v.  A=0, B=1, 0 ere represent.  Undefined.  Canonic of the control of	fluction is called null able extion if it is of the form N fluction is called null able extion if it is of the form N fluction is called null able extion if it is of the form A fluction is called null able extion if it is of the form A fluction is called null able extion if it is of the form A fluction is called null able extion if it is of the form A fluction is called null able extion if it is of the form A fluction is called null able extion if it is of the production is called the production if it is of the soft in the expression will beLogic when C=1 while symbol '+' ents OR Gate.  In the above the above the grammar for the above the grammar for the above the grammar for the symbol is called null able extion if it is of the above the grammar for the gr
compared to writing the 1% portion	AB	-	CD
compared to writing the 1% portion of program in assembly language is	AB CD	→ →	CD CE
A. 0 B. 0.12			aC
C. 10 D. 0.99  > Ans: A. 0	C	7	
> Ans: A. 0	C		b

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Dogar Testmaster	235
G=(N, T, P, S)	77. Let suppose a user want to check
bE → bc is	whether a given set of items is sorted
A. is type 3	or not. Which of the following
B. Is type 2 but not type 3	sorting methods will be the most
C. is type 1 but not type 2	well organized if it isalready in
D. is type 0 but not type 1	SOFICA Ordera
> Ans: C. is type 1 but not type	Subole Still
*	B. Selection sort
3. Consider the following language	C. Quick sort
$L = \{a^n b^n   n \ge 1\} \text{ then L is}$	D. Insertion sort
A. CFL but not regular	Ans: D. Insertion sort
B. CSL but not CFL	78 A-CD.
C. Regular D. Type 0 language but not type	78. An S-R latch can be implementing by means of
> Ans: A. CFL but not regular	r A. AND, NOR
	B. NAND, NOR
4. Quick sort is	C. AND, XOR
A. Stable & in place	D. NOT, XOR
B. Not stable but in place	Ans: B. NAND, NOR
C. Stable but not in place     D. Sometime stable & some time	
<ul> <li>D. Sometime stable &amp; some time in place</li> </ul>	( - F-search of an array)
> Ans: B. Not stable but in	constructed from the list of numbers
place	30, 10, 80,60, 15, 55, and 17 is:
	A. 60, 80, 55, 30, 10, 17, 15
75. Fibonacci function fib(n) = fib(n-	-1) B. 80, 55, 60, 15, 10, 30, 17
+ fib(n -2) is an example of	C. 80, 60, 36, 17, 55, 55, 10
A. Direct recursion	D. None of the above
B. Indirect recursion	Ans: B. 80, 55, 60, 15, 10, 30,
C. Linear recursion	17
D. None of the above	00 111.1 01 01.
> Ans: A. Direct recursion	80. Which of the following searching
as which of the following cost inco-	method requires that all keys must
76. which of the following sort inser	
each elements A (K) into proper	D P U
positionin the previously sorted	sub B. Forwarding search
array A (1) A (K-1)	C. Binary search
A. Insertion sort	D. None of these
	Ans: C. Binary search
	81 Which of the Callentine Constitution
C. Merge sort	81. Which of the following function is
D. None of the above	performed by the database
> Ans: A. Insertion sort	administrator?
	A. Plans for information resources
The second secon	
domy	loorpingkidupya blogenot cor

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B. Oversees the development of information resources C. Defines the database structures D. Monitors information resources > Ans: C. Defines the database structures  82. A micro-program written as string of 0's and 1's is a A. Binary microprogram B. Binary instructions C. Symbolic instructions D. Syboliemicroprogram > Ans: A. Binary microprogram > Ans: A. Binary microprogram  83. The reason of ambiguity may be A. Syntactic ambiguity B. Multiple word meanings C. Unclear antecedents D. All of the above > Ans: D. All of the above  84. A process which is repeated, assess, and polished is known as A. Interconnected B. Iterative C. Interpretive D. None of the above > Ans: B. Iterative  85. In Breadth First Search the node with the largest value of height will be at the A. Maximum priority to be picked. B. Minimum priority to be picked. C. Intelligent agent D. None of the above > Ans: A. Maximum priority to be picked. C. Intelligent agent D. None of the above > Ans: A. Maximum priority to be picked. C. Intelligent agent D. None of the above	I. The teacher should know the following thing:  (A) What information is required by children?  (B) What is known to the children before hand?  (C) In which field difficulty is faced by the children?  (D) What was last known to the children?  > Ans: C. In which field difficulty is faced by the children?  > Ans: C. In which field difficulty is faced by the children?  2. Which of the following is not emphasized in memory level of teaching?  (A) cramming of the learnt material  (B) presenting the subject matter by giving least freedom to pupils  (C) conducting tests along with teaching  (D) Helping the pupils generalize the acquired knowledge  > Ans: C. Conducting tests along with teaching  3. True or false items cannot provide accurate criterion of evaluation because  (A) chance of guessing on the part of examinees is at highest probability  (B) they do not require thorough study to attempt  (C) they generally inflate actual scores due to guessing or cheating	Ans: D.All of the above 4. Teaching by small steps and frequent short assignment techniques are useful for:  (A) Slow learners  (B) Learning disabled  (C) Educationally backward children  (D) All of the above  > Ans: D.All of the above  > Mitch of the following purposes is served by lesson plan?  (A) Suitable learning environment can be created in the class  (B) Psychological teaching is possible  (C) A teacher can stick to his content  (D) All of the above  Ans: D.All of the above  (C) A teacher can stick to his content  (D) All of the above  Ans: D.All of the above  Ans: D.All of the above  (A) will tell about your style according to students  (C) will make harmony with student's style  Ans: D.Will make harmon

Computer Science



Candidates must read and follow instructions given on reverse of the answer All answers are required to be written on the answer sheet and NOT on the Total MCO's: 100 Total Marks: 100 5. charbuf [] = "Hello world!"; char \* buf = "Hello world!": In terms of code generation, how do the two definitions of buf, both presented above, differ? A. The first definition certainly allows the contents of buf to be safely modified at runtime; the second definition does not. B. The first definition is not suitable for usage as an argument to a function call: the second definition is. C. The first definition is not legal because it does not indicate the size of the array to be allocated; the second definition is legal. D. They do not differ -- they are functionally equivalent. Ans: D. They do not differ they are functionally equivalent. 6. Which one of the following will read a character from the keyboard and will store it in the variable c? A. c = getc(); B. getc(&c); C. getchar(&c) D. c= getchar(): > Ans: D. c = getchar();

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The output when the
Calleming COUC is Care
$\inf_{v \in A} v[A] = \{0, 1, 0, 2\},$
$\inf_{y \in Y} y = y + 2;$ $f(x) $
printf("%d\n", ptr[ 1 ]), P
ptr[1]*/ P 10
A. 0 D 7
C. 9 > Ans: C. 9
8. When applied to a variable, what
does the unary "&" operator y
A. The variable's value
B. The variable's binary form C. The variable's address
D. The variable's data
> Ans: C. The variable's
address
9. If there is a need to see output as
as possible what function with
force the output from the buffer inte
the out0.put stream?
A. flush() B. output()
C. fflush() D. dump()
> Ans: A. flush()
a that determines the
10. The property that determines the
order in which a condition
focus is:
A. Tab Order.
B. Tab Sequence.
C. Tab Index.
D. Sort Order.
> Ans: C. Tab Index.
the second of
11. Virtual functions allow you to
A Create an array of type pointer
to-base class that can note
pointers to child classes.
B Create functions that can never
be accessed by the other
functions.
C. Use the same function can to
execute member functions of

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	D.	Group objects of different classes so they can all be accessed by the same function code.
	>	Ans: C. Use the same function call to execute member functions of objects from different classes.
12.	W	hich of the following causes run e binding?
	A.	Declaring object of abstract
	B.	Declaring pointer of abstract
	C.	Declaring overridden methods as non-virtual
	D.	None of the above
	>	Ans: D. None of the above
13.	Co	mpiler performs
	A.	Static type checking to diagnose type errors.
	B.	Dynamic type checking to diagnose type errors.
	C.	Bound type checking to diagnose type errors.
	D.	Unbound type checking to diagnose type errors.
	>	Ans: A. Static type checking to diagnose type errors.
14.	Pub	olic methods of base class can
	A.	Directly be accessed in its derived class
	B.	Indirectly be accessed in its derived class
	C.	Simultaneously be accessed in its derived class
	D.	Cannot be access in derived class
	A	Ans: A. Directly be accessed

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15.	The concept of hierarchical
	classification is related to
	A. Abstraction
	B. Inheritance
	C. Function overloading
	D. None of the above
	> Ans: B. Inheritance
16.	By the use of encapsulation a user
	can obtained
	A. Information hiding
	B. Least interdependencies among
	classes
	C. Implementation independence
	among modules
	D. All of given options
	> Ans: Information hiding
17.	with no using Deep copy
***	constructor
	A. System crash problem will
	occur.
	B. Memory Leakage problem wi
	occur.
	<ul> <li>C. Dangling pointer problem will occur.</li> </ul>
	D. All of the above.
	> Ans: All of the above.
18	Which of the following are valid
0.7	characters for a numeric literal
	constant?
	A. A comma
	B. dollar sign (\$)
	C. A percent sign (%)
	D. None of the above
	> Ans: D. None of the above
10	9. Choose one of the following
1	A. Struct is encapsulation
	B. Class is encapsulation

Computer Science	E
C. Functions is hiding the	15
parameters.	100
D. None of the above	57 9
Ans: B. Class is encapsulation	N.
20. The parameters which are used to	
measure the efficiency of an	1007
algorithm are .	
A. Processor and C.P.U,	-
B. complexity and integrity,	
C. Time and space, D. Data and space,	6
> Ans: C. Time and space	
21. All of the following cases exist in	1
complexity theory except	
A. Best case B. worst case C. None case D. Null case	1
C. None case D. Null case	16
> Ans: D. Null case	
22. Which of the following is the	0
complexity of bubble sort algorithm?	
A. O(n) B. O(log 2)	1
C. $O(n^2)$ D. $O(n \log n)$	
> Ans: C. O(n <sup>2</sup> )	
22	
23. All the elements of an array are	
stored in memory cells for the reason	30
that. A. This way computer can keep	
The stay comparer can recep	1131
track only the address of the	13.0
first element and the addresses	6.
of other elements can be	1 2
calculated.	1
B. The architecture of computer	1 8
memory does not allow arrays	113
to store other than serially.	
C. Both of above.	
D. None of above.	
> Ans: A. This way computer	
can keep track only the	
address of the first element	
and the addresses of other	
elements can be calculated.	

4111	Computer Science	Dogar resultantel	
24. The second name of two dimensional arrays is A. Table arrays B. Serial arrays C. Both of above D. All of above ➤ Ans: C. Both of above  25. What is the difference between linear array and a record? A. An array is suitable for homogeneous data but hte data items in a record may have different data type. B. In a record, there may not be a natural ordering in opposed to linear array. C. A record form a hierarchical structure but a lienear array does not. D. All of above. ➤ Ans: D. All of above.  26. The "push" and "pop" is correlated to which of the given? A. Array B. lists C. Stacks D. None of above ➤ Ans: C. Stacks  27. Which of the following option is a data structure which is linear? A. String B. List C. Queue D. All of above ➤ Ans: D. All of above  28. The binary numbers A = 1100 and B = 1001 are applied to the inputs of a comparator. What will be the output levels? A. A > B = 1, A < B = 0, A < B = 1 B. > B = 0, A < B = 1 B. > B = 0, A < B = 1 B. Ans: C. A > B = 1, A = B = 0 C. A > B = 1, A < B = 0, A < B = 1 D. Ans: C. A > B = 1, A < B = 0, A < B = 1 D. Ans: C. A > B = 1, A < B = 0, A < B = 1 D. Ans: C. A > B = 1, A < B = 0, A < B = 1 D. Ans: C. A > B = 1, A < B = 0, A < B = 1 D. Ans: C. A > B = 1, A < B = 0, A < B = 1 D. Ans: C. A > B = 1, A < B = 0, A < B = 1 D. Ans: C. A > B = 1, A < B = 0, A < B = 1 D. Ans: C. A > B = 1, A < B = 0, A < B = 1 D. Ans: C. A > B = 1, A < B = 0, A < B = 1 D. Ans: C. A > B = 1, A < B = 0, A < B = 1 D. Ans: C. A > B = 1, A < B = 0, A < B = 1 D. Ans: C. A > B = 1, A < B = 0, A < B = 1 D. Ans: C. A > B = 1, A < B = 0, A < B = 1 D. Ans: C. A > B = 1, A < B = 0, A < B = 1 D. Ans: C. A > B = 1, A < B = 0, A < B = 1 D. Ans: C. A > B = 1, A < B = 0, A < B = 1 D. Ans: C. A > B = 1, A < B = 0, A < B = 1 D. Ans: C. A > B = 1, A < B = 0, A < B = 1 D. Ans: C. A > B = 1, A < B = 0, A < B = 1 D. Ans: C. A > B = 1, A < B = 0, A < B = 1 D. Ans: C. A > B = 1, A < B = 0, A < B = 1 D. Ans: C. A > B = 1, A < B = 0, A < B = 1 D. Ans: C. A > B = 1, A < B = 0, A < B = 1 D. Ans: C. A > B = 1, A <	29. The ABEL notation equivalent to Boolean expression A+B is A. A & B B. A ! B C. A # B D. None of the above Ans: C. A # B  30. If a cache access requires one clock cycle and handling cache misses stalls theprocessor for an additional five cycles, which of the following cache hit ratescomes closest to achieve an average memory access of 2 cycles? A. 75 B. 80 C. 83 D. 86 Ans: B. 80  31. The PROM consists of a fixed non-programmable A. NAND Gate array configured as a decoder. B. OR Gate array configured as a decoder. C. NOT Gate array configured as a decoder. D. AND Gate array configured as a decoder.  Ans: D. AND Gate array configured as a decoder.  Ans: D. AND Gate array configured as a decoder.  Ans: D. AND Gate array configured as a decoder.  Ans: D. AND Gate array configured as a decoder.  Ans: D. AND Gate array configured as a decoder.  C. And Gate array configured as a decoder.  Ans: D. AND Gate array configured as a decoder.  C. Ans: D. AND Gate array configured as a decoder.  Ans: D. AND Gate array configured as a decoder.  C. Ans: D. AND Gate array configured as a decoder.  Ans: D. AND Gate array configured as a decoder.  A parallel to serial converter circuit connected to the multiplexer  B. A counter circuit connected to the multiplexer  C. A BCD to decimal decoder connected to the multiplexer  Ans: A. A parallel to serial converter circuit connected to the multiplexer  Ans: A. A parallel to serial converter circuit connected to the multiplexer	33. Two 2-input, 4-bit multiplexers 74X157 can be connected to apply A. 4-input, 8-bit a multiplexer. B. 4-input, 16-bit a multiplexer. C. 2-input, 8-bit a multiplexer. D. 2-input, 8-bit a multiplexer.  > Ans: D. 2-input, 8-bit a multiplexer.  > Ans: D. 2-input, 8-bit a multiplexer.  34. Operating system provides the services of A. I/O handling. B. program execution C. Communication D. All of the above  > Ans: D. All of the above  35. While computer is turned on or restarted, a special type of absolute loader isexecuted; identify the name of loader? A. Init boot loader B. boot loader C. Relating loader D. Bootstrap loader  > Ans: D. Bootstrap loader  36. Which option is used in operating system to separate mechanism? A. Two level implantation B. Multilevel implantation C. Single level implementation D. Hierarchal implementation D. Hierarchal implementation  > Ans: A. Two level implantation C. Single level gingle process? A. Terminated B. running C. Block D. Ready  > Ans: C. Block  38. Which of the following statement is true about non-preemptive scheduling?	A. A process switching from running state to the waiting state  B. A process switching from ready to running state  C. A process switching from new to ready state  D. A process switching from new to ready state  Ans: A. A process switching from new to ready state  Ans: A. A process switching from new to ready state  Ans: A. A process switching from running state to the waiting state  39. What do databases and DBMSs directly support?  A. OLDP  B. OLTP  C. Databases  D. Operational databases  Ans: B. OLTP  40. What file access method allows the user to directly access records organizedsequentially using an index of key fields?  A. Sequential access method  B. Indexed sequential access method  C. Direct access method  D. Relational access method  Ans: B. Indexed sequential access method  41. Which of the following term describes each two-dimensional table or file in therelational model?  A. Database Management System  B. Relational database  C. Network database  D. None of the above  Ans: D. None of the above  Ans: D. None of the above

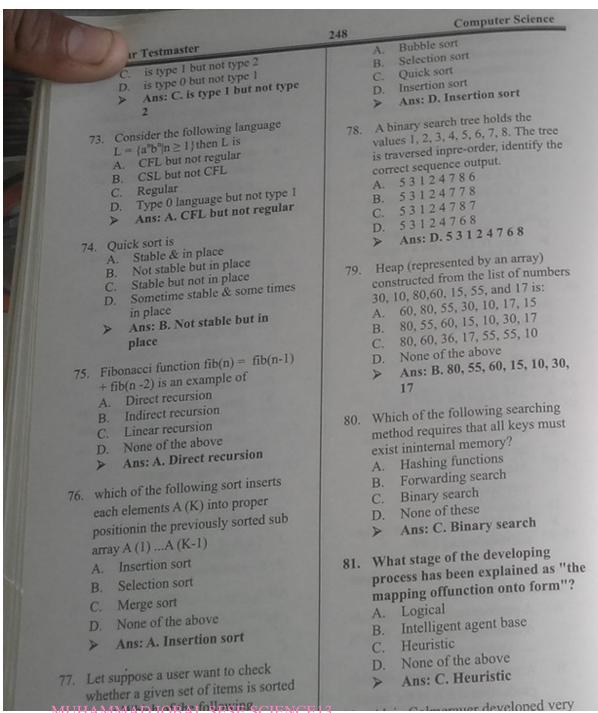
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11.3	Computer Science	Dogar Testmaster 245 buildinginterface prototypes	Computer Science
A. It is a two-dimensional table used to store data within a relational database.  B. It is a multi-dimensional table used to store data within a relational database.  C. It is storage area where data about data is stored  D. It is a two-dimensional table used to store data within a database.  > Ans: C. It is storage area where data about data is stored  43. If there is a one-to-one relationship between entity A and B, then  A. There exists a functional dependency from the primary key in B to the primary key in B to the primary key in A, i.e., PKB. PKA  B. There exists a functional dependency from the primary key in A to the primary key in B, i.e., PKB. C. Both A and B  D. None of the above  Ans: C. Both A and B  One of the above  Ans: C. Both A and B  44. The logical structure of information in a database is contained in the A Data manipulation system  D. Data administration subsystem  D. Data definition subsystem  D. Data dictionary  Ans: D. Data dictionary  45. Which of the following statement is learningkiddunya.blogspot.com	defined capabilities into a working product.  B. The goal of product engineering is to check the DFD for the requirements.  C. The goal of product engineering is to translate the logical design to physical design.  D. None of the above Ans: A. The goal of product engineering is to translate the customer's desire for a set of defined capabilities into a working product.  46. The IEEE software maturity index is used to provide a measure of the A. Maintainability of a software product based on its availability B. Specification of the software according to user's requirement C. Reliability of a software product following regression testing D. Stability of a software product as it is modified during maintenance Ans: D. Stability of a software product as it is modified during maintenance  47. Requirements validation review is conducted by A. Testing the system model B. Have the customer look over the requirements C. The software requirement team D. Use a checklist of questions to examine each requirement Ans: D. Use a checklist of questions to examine each	including A. Black box testing B. Software engineering tools C. Input validation D. None of the above Ans: C. Input validation  49. Which of the following is true about many of the tasks from the generic tasksets for analysis modelling and design? A. Can be conducted in sequential way. B. Can be conducted in parallel with one another. C. Is the most difficult task of the system engineering? D. None of the above. Ans: B. Can be conducted in parallel with one another.  50. The sharing of a medium and its link by two or more than two devices is called A. Modulation B. De-multiplexing C. Line discipline D. Multiplexing Ans: D. Multiplexing  51. Which layer of OSI model is used to cover the specifications of transmissionmedia? A. Session Layer B. network layer C. Physical layer D. Application layer Ans: C. Physical layer  52. Which of the following statement is true about microwave A. Microwave transmission is omnidirectional	B. Microwave transmission is unidirectional C. Microwave transmission is bidirectional D. Microwave transmission is directional  Ans: B. Microwave transmission is directional  Ans: B. Microwave transmission is unidirectional  53. Which of the following error detection method uses one's complement? A. Even parity check B. Odd parity check C. Checksum D. Cyclic Redundancy Check Ans: C. Checksum  54. A technique which restrict the amount of data that the sender can send beforewaiting for acknowledgment. A. Flow control B. multiplexing C. Data rate D. Error control Ans: A. Flow control  55. Which of the IEEE specifications is used for wireless LAN which covers thephysical and data link layer of OSI reference model A. IEEE 802.3 B. IEEE 802.11.4 C. IEEE 802.11 D. IEEE 802.11  56. Which of the following is not Ethernet unicast destination? A. 44:AA:C1:23:45:32 B. 43:7B:6C:DE:10:00 C. 46:56:21:1A:DE:F4 D. 48:32:21:21:4D:34  Ans: B. 43:7B:6C:DE:10:00
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1 Barrier	246
gar Testmaster	6.
Which of the follow example of analog A. FDM C. ACM Ans: A. FDM  58. Packet-switched ne be divided into A. virtual-circuit datagram netw histogram netw histogram netw c. virtual-circuit D. datagram netwon the datagram network.	ving is an technique? B. WDM D. FCM  tworks can also networks and orks networks and vorks networks networks
networks and networks	unung
59. A register which is track of address of location?  A. Address Register  B. Data Register  C. Instruction Region  D. Program Coun  Ans: D. Program	gister ter am Counter
D. All of above  Ans: B. More  program in m	program in memory in the than one emory
61. The address of the infollowing the CALI stored in/onthe when called is  A. Stack pointer  B. adder	instructions, a subroutine is

240	seal unit of
	single silicon chip, called?
	A. Minichip
	B. microprocessor
	C. ALU
	D. CU > Ans: B. Microprocessor
	Ans: D. Marie
	63. The key feature of the PCI BUS is
	B. Plug and Play capability.
	B. Plug and Flay  C. Expansion of Bandwidth.
	D. Both A. and C.
	> Ans: B. Plug and Play
	capability.
	64. The address space in ARM is
3	64. The address -
	A. 2^24 B. 2^64
	D. 232
	C. 2 <sup>^16</sup> > Ans: D. 2 <sup>^32</sup>
	In where the FA
	65. The addressing mode where the EA
	65. The addressing most of the operand is the contents of Rn
	32
	pro indexed mode
	B. Pre-indexed with write back
	mode
	:-dayed mode
	at a of the above
	D. None of the door
	> Ans: C. Post-indexed
	66. The CPU is also called as
	66. The CPU is also call
	A. Processor hub
	B. ISP
	C. Controller
	D. All of the above
	D ISP
	Ans: B. 151
10	

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	2	47
67.	If L1 and L2 are regular languages; then which of the following are also regularlanguage(s).  A. L1 + L2 B 11.2	C.
	A. L1+L2 B. 1L2 C. L1* D. All of above  ➤ Ans: D. All of above	D
68.	If L is a regular language then which of the following is true?	>
	<ul> <li>A. La is also a regular language.</li> <li>B. Lb is also a regular language.</li> <li>C. Lx is also a regular language.</li> <li>D. Lc is also a regular language.</li> <li>Ans: D. Lc is also a regular language.</li> </ul>	71.
69.	look at the following CFG and pick the correct option S→ AB, A→BSB, B→ CC C→ SS A→ a b C→ b bb A. Abb is not the word of corresponding CFL. B. One word can be accept from the corresponding CFL. C. Abb is a word in the corresponding CFL. D. None of the above Ans: C. Abb is a word in the corresponding CFL.	72
70.	<ul> <li>Which of the following is true about null able production?</li> <li>A. A production is called null able production if it is of the form N → Λ.</li> <li>B. A production is called null able production if it is of the form N</li> </ul>	

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		Com	aputer Science	
	→ N. D. A proc	uction is tion if it duction i	is called null able t is of the form A is called null able it is of the form A	N. W. W. T.
	null a	A. A proble pro	oduction is called oduction if it is of → Λ.	
7	B. The term produced the produced term produced term produced term reproduced	product inal → luction. produce production e production e production e production e production e of tons: B. 7 orm no	A is said to be null  tion of the form no  A is said to be null	
	72. The fo			
1	G = (N, $N = CC$			
	$N = \{S,$ $T = \{a,$		$\mathcal{L}, \mathcal{D}, \mathcal{E}$	
1	$P: S \rightarrow$			
1	AD	→	CD	
	CD	$\rightarrow$	CE	
	C	$\rightarrow$	aC	
	C	$\rightarrow$	Ь	
	bE	$\rightarrow$	bc is	
	Δ	ic tur	na 2	



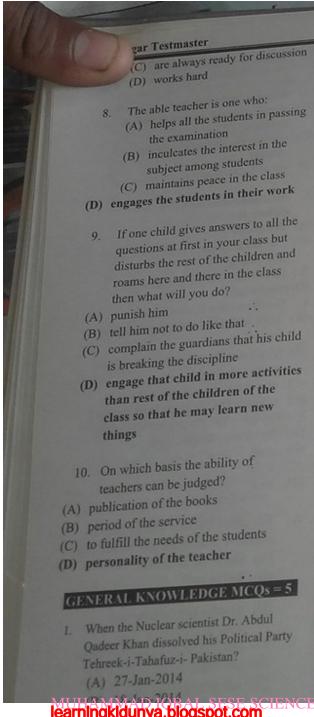
A. 1970 at the University of California B. 1971 at the University of Manchester C. 1972 at the University of Marseilles D. 1973 at the University of Frankfurt Ans: C. 1972 at the University of Marseilles  83. The reason of ambiguity may be A. Syntactic ambiguity B. Multiple word meanings C. Unclear antecedents D. All of the above Ans: D. All of the above	
B. 1971 at the University of Manchester C. 1972 at the University of Marseilles D. 1973 at the University of Frankfurt Ans: C. 1972 at the University of Marseilles  83. The reason of ambiguity may be A. Syntactic ambiguity B. Multiple word meanings C. Unclear antecedents D. All of the above	
Manchester C. 1972 at the University of Marseilles D. 1973 at the University of Frankfurt  Ans: C. 1972 at the University of Marseilles  83. The reason of ambiguity may be A. Syntactic ambiguity B. Multiple word meanings C. Unclear antecedents D. All of the above	
Manchester C. 1972 at the University of Marseilles D. 1973 at the University of Frankfurt  Ans: C. 1972 at the University of Marseilles  83. The reason of ambiguity may be A. Syntactic ambiguity B. Multiple word meanings C. Unclear antecedents D. All of the above	2. (
Marseilles  D. 1973 at the University of Frankfurt  Ans: C. 1972 at the University of Marseilles  83. The reason of ambiguity may be A. Syntactic ambiguity B. Multiple word meanings C. Unclear antecedents D. All of the above	Y
D. 1973 at the University of Frankfurt  Ans: C. 1972 at the University of Marseilles  83. The reason of ambiguity may be A. Syntactic ambiguity B. Multiple word meanings C. Unclear antecedents D. All of the above	(A)
Ans: C. 1972 at the University of Marseilles  83. The reason of ambiguity may be A. Syntactic ambiguity B. Multiple word meanings C. Unclear antecedents D. All of the above	(B)
Ans: C. 1972 at the University of Marseilles  83. The reason of ambiguity may be A. Syntactic ambiguity B. Multiple word meanings C. Unclear antecedents D. All of the above	
83. The reason of ambiguity may be A. Syntactic ambiguity B. Multiple word meanings C. Unclear antecedents D. All of the above	(C)
83. The reason of ambiguity may be A. Syntactic ambiguity B. Multiple word meanings C. Unclear antecedents D. All of the above	
A. Syntactic ambiguity B. Multiple word meanings C. Unclear antecedents D. All of the above	(D)
A. Syntactic ambiguity B. Multiple word meanings C. Unclear antecedents D. All of the above	
B. Multiple word meanings C. Unclear antecedents D. All of the above	3.
C. Unclear antecedents D. All of the above	
	(A)
> Ans: D. All of the above	(B)
	(C
84. A process which is repeated,	(I)
assess, and polished is known as	4.
A. Interconnected	(A
B. Iterative	
C. Interpretive	(1
D. None of the above	(,
> Ans: B. Iterative	
85. In Breadth First Search the node	(
	1
with the largest value of height will	3
be at the	1
A. Maximum priority to be picked.	1
B. Minimum priority to be picked.	
C. Intelligent agent	
D. None of the above	1
> Ans: A. Maximum priority to	
be picked.	
PADAGOGY MCQs = 10	
TADAGOGT MCQS-10	
1. Child development is marked by	
interrelated processes. Which one is not	
one of them?	
(A) differentiation	1
(B) integration	11/2
(C) motivation	
ndemy	

	Your study Partner
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	2. Generally students like those teachers who:
	(A) dictate notes in the class
	(B) reveal important Questions before
	-vanithighous
	(C) remove the difficulties of the
	subject
	(D) are self-disciplined
	3. The students learn most from those
	teachers who:
	(A) are gentle
	(B) express their ideas comprehensively
	and clearly
	(C) are always ready for discussion
	(D) works hard
	4. The able teacher is one who:
	(A) helps all the students in passing the examination
	(B) inculcates the interest in the subject among students
	(C) maintains peace in the class
	(D) engages the students in their work
	5. Through which action children learn fast?
	(A) facial expression
1.	(B) study
	(C) write
	(D) walk
0	( m : 1 a
	6. The job of a school teacher is more
	attractive than in the past because of:
	(A) higher social status
	(B) higher pay
	(C) more training institution
	(D) greater job satisfaction
t	
	7. The students learn most from those
	teachers who:
	(A) are gentle
	(A) are gentle

(B) express their ideas

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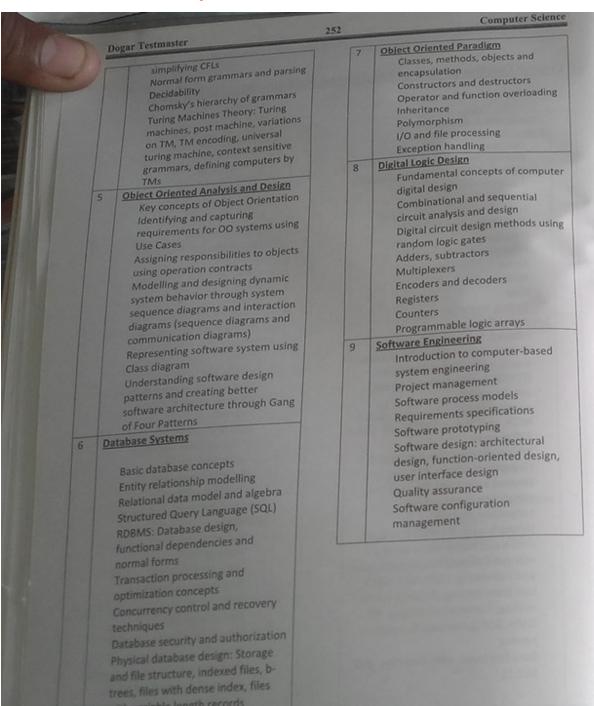
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	(D)	10-Jan-2014
2.	Who their each inclu	visited Pakistan, agreed to deepen defence cooperation and support other's position on regional issues, ding Syria and Afghanistan? Saudi Foreign Minister
	(C) (D)	French Foreign Minister
3.	secret	Aizaz Chaudhary
	(B)	Saleem Qureshi Chaudhry Kashif Khan Ahmad Zahoor
	Atton	ney General
	marian	ed from his post.
	(A)	Munir A Malik
	(B)	Irfan Qadir
	(C) (D)	Aslam Shad Farhan Qureshi
	Who	ook over as the chairman of
	nation	al Assembly's Kashmir
	(A)	Molana Fazal ur Rehman
	(B)	Hamad Azam
	(C)	Qamar uz zaman Qaira
	(D)	Umair Anjum ch
	(D)	Umair Anjum ch

Course Outline of Computer Science for Educators (SESE & SSE) Introduction to Computing and **Programming Fundamentals** Computer and its applications Problem solving strategies: Algorithm, flow charts, pseudocode Algorithm development (Input/Output, conditional statements, iteration, tracing of algorithm) Data types **Functions** Arrays Records Files Testing programs **Computer Networks** Internet: Network edge, network core, access networks, transmission media, network delays, Internet (TCP/IP) protocol stack, Internet service models Application layer: Principles, Web & HTTP, web caches, FTP, E-mail, DNS. P2P systems Transport layer: Services, UDP, TCP (Segment structure, RTT and timeout estimation, flow control, connection management. congestion control) Network layer: Principles, virtualcircuit and datagram networks, Internet Protocol (IP), IP addressing and subnetting, CIDR, NAT, DHCP, Link state routing, distance vector routing, hierarchical routing, RIP, OSPF, BGP, broadcast & multicast routing Data link layer: ARP, Ethernet, IEEE 802.11

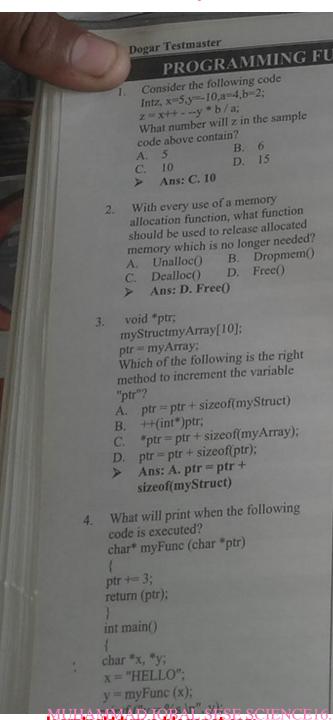
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Operating Systems Theory and implementation of process management Thread management Process synchronization Deadlock management Memory management File management Data Structures and Algorithms Arrays Linked Lists Stacks Queues Recursion Sorting and searching algorithms Heaps Trees Graphs and traversals Minimum spanning tree algorithms Shortest path algorithms Hashing Algorithm complexity, Polynomial and intractable algorithms Divide and conquer Dynamic programming Greedy algorithms Theory of Automata and Formal Languages Regular expressions / Regular languages Finite automata (FA) Transition graphs (TGs) NFAs Kleene's theorem Transducers (automata with output) Pumping lemma and non-regular language grammars and PDA: context free grammars, derivations, derivation trees and ambiguity,

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Computer Science
PROGRAMMING FUNDAMENTALS (MCQs)
                                     A. y = HELLO B. y = ELLO
                                     C. y = LLO D. y = LO
                                     > Ans: D. y = LO
                                    struct node *nPtr, *sPtr; are a linked
                                     for (nPtr=sPtr; nPtr; nPtr=nPtr-
                                     >next)
                                     free(nPtr);
                                     The sample code above free memory
                                     from a linked list. Which of the
                                    choices below accurately describes
                                    how it will work?
                                    A. It will work correctly since the
                                         for loop covers the partial list.
                                        It may fail since each node
                                         "nPtr" is freed before its next
                                         address cannot be accessed.
                                       In the for loop, the assignment
                                         "nPtr=nPtr->next" should be
                                        changed to "nPtr=n*Ptr.next
                                    D. None of the above
                                       Ans: D. None of the above
                                    What function will read a specified
                                    number of elements from a file?
                                    A. fileread() B. getline()
                                                     D. fread()
                                    C. readfile()
                                        Ans: D. fread()
                                    "My salary was increased by 15%!"
                                    Select the statement which will
                                    EXACTLY reproduce the line of
                                    text above.
                                   A. printf("My salary was increased
                                        by 15%!\n");
                                   B. printf("My salary was increased
                                        by 15'%"!\n");
                                   C. printf("\"My salary was
                                        increased by 15%%!\"\n");
```

D. None of the above

was increased by

Ans: C. printf("\"My salary

```
Dogar Testmaster
                                        255
    What is a difference between a
     declaration and a definition of a
     variable?
    A. Both can occur multiple times.
         but a declaration must occur
         first.
    B. A declaration occurs once, but
         a definition may occur many
         times.
    C. Both can occur multiple times,
         but a definition must occur
         first.
    D. There is no difference between
         them.
         Ans: B. A declaration occurs
         once, but a definition may
         occur many times.
   inttestarray [3][2][2] = \{1, 2, 3, 4, 5, ...
     6, 7, 8, 9, 10, 11, 12);
    What value does testarray[2][1][0] in
    the sample code above contain?
                       B. 5
     C. 7
                       D. 11
        Ans: D. 11
10. int a=10,b;
     b=a+++++a;
    printf("%d,%d,%d,%d",b,a++,a,++a)
    What will be the output when
    following code is carry out
    A. 12,10,11,13 B. 22,10,11,13
    C. 22,13,13,13 D. 12,11,11,11
        Ans: C. 22,13,13,13
11. shortint x; /* assume x is 16 bits in
     size */
    What is the maximum number that
    can be printed using printf("%d\n",
    x), assuming that x is initialized as
    shown above?
         127
                        B.
                            128
         255
                        D. 32,767
         Ans: D. 32,767
```

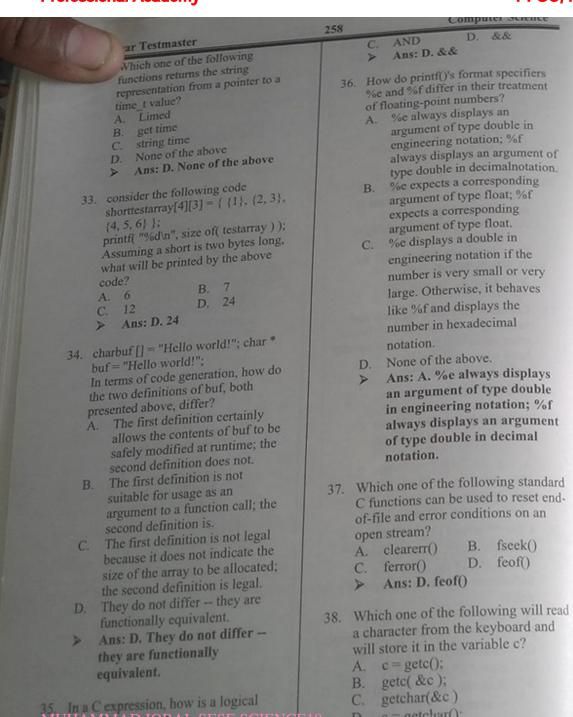
```
Computer Science
12. Consider the following code
    voidmyFunc (int x)
    if(x>0)
    myFunc(--x):
    printf("%d, ", x);
     int main()
     myFunc(5);
      return 0:
     What will the above sample code
     produce when executed?
      A. 0, 0, 1, 2, 3, 4,
      B. 1, 2, 3, 4, 5, 5,
      C. 4, 3, 2, 1, 0, 0,
      D. 0, 1, 2, 3, 4, 5,
      > Ans: A. 0, 0, 1, 2, 3, 4,
  13. 11 ^ 5
       What does the operation shown
       above produce?
       A. 12
                        B. 14
       C. 15
                        D. 17
           Ans: B. 14
   14. #define MAX_NUM 15 Referring to
        the sample above, what is
        MAX NUM?
        A. MAX NUM is an integer
             variable.
        B. MAX NUM is a character
             constant.
         C. MAX NUM is a preprocessor
         D. MAX NUM is a constant
              variable.
             Ans: C. MAX NUM is a
               preprocessor macro
     15. Which one of the following will turn
          off buffering for stdout?
          A. setbuf(stdout, FALSE, NULL);.
          B. setvbufer(stdout, NULL);
           C. setbuf(stdout, IONBF,NULL
           D. None of the above
```

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Piul	ressional Academy
	Dogar Testmaster  6. What is a proper method of opening a file for writing as binary file?  A. FILE *f = fwrite( "test.bin", "bin");  B. FILE *f = fopen( "test_bin", "wbin");  C. FILE *f = fopen( "test_bin", "bw");  D. None of the above  > Ans: D. None of the above  Which one of the following  17. Which one of the following
	17. Which one of the following functions is the correct choice for moving blocks of binary data that are of arbitrary size and position in memory?  A. memcpy() B. memmove()  C. memset() D. strncpy()  Ans: B. memmove()  18. int x = 2 * 3 + 4 * 5;  What value will x contain in the sample code above?  A. 22 B. 35  C. 26 D. 34  Ans: C. 26
	<ul> <li>int var1; If a variable has been declared with file scope, as above, can it safely be accessed globally from another file?  A. Yes; it can be referenced through the static variable.  B. No; it would need to have been initially declared using the global keyword.  C. No; it would have to have been initially declared as a dynamic variable.  D. Yes; it can be referenced through the extern variable.  Ans: B. No; it would need to</li> </ul>
lear	have been initially declared using the global keyword.  nlingkidunya.blogspot.com

	PPSC, NTS I
56	
20.	time t; Which one of the following statements will properly initialize the variable t with the current time from the sample above will execute?  A. t = clock(); B. time(&t); C. t = ctime(&); D. None of the above  Ans: A. t = clock();
21.	Which one of the following provides conceptual support for function calls?  A. The data segment B. The system stack C. The code segment D. The text segment > Ans: B. The system stack
22.	C is which kind of language?  A. Machine B. Procedural C. Object-oriented D. Assembly Ans: B. Procedural  Consider the following code and
23.	what will be printed sample code below is executed? int x = 0; for (x=1; x<4; x++); printf("x=%d\n", x);  A. x=0  C. x=2  Ans: D. x=4
24.	Let see the following code and what value will x contain when the sample code below is executed?  int x = 3;  if(x == 2);  x = 0;  if(x == 3)  x++;  else x += 2;  A. 1  C. 3  Ans: B. 2  D. 4

<b>1</b> 51	EK	Your study Partn
25.	Let consider the following code and	257 Computer Science
	what string does ptr point to in the sample below? char *ptr; charmyString[] = "abcdefg"; ptr = myString; ptr += 5; A. cfg B. fg C. cdefg D. abfeg  Ans: B. fg	29. Void (*signal(int sig, void (*handler) (int))) (int); Which one of the following definitions of sighandler t allows the above declaration to be rewritten as follows: sighandler_t signal (int sig, sighandler_t handler); A. typedefsighandler_t void (*int) (int); B. typedef void *sighandler_t
26.	Which one of the following will declare a pointer to an integer at address 0x200 in memory?  A. *x = 0x200; B. int *x = &0x200;  C. int *x = 0x200; D. int *x(&0x200);	C. typedef void (*sighandler_t) (int); D. #define sighandler_t void (*) (int) Ans: C. typedef void (*sighandler_t) (int);
	Ans: A. *x = 0x200;	30. Struct customer *ptr = malloc(sizeof( struct customer ) ); Given the sample all
27.	Consider the following code and referring to the sample code below, what value will the variable counter have when completed?  x = 3, counter = 0; while ((x-1)) { ++counter; x; } A. 1 B. 2 C. 4 D. 5  Ans: B. 2	pointer "ptr" found above, which one of the following statements is used to reallocate ptr to be an array of 10 elements?  A. realloc(ptr, 10 * sizeof( struct customer ) );  B. ptr += malloc( 10 * sizeof( struct customer ) );  C. ptr = realloc(ptr, 10 * sizeof( struct customer));  D. realloc(ptr, 10 * sizeof( struct customer ) );  Ans: C. ptr = real loc(ptr, 10 * sizeof( struct customer ) );
28.	Char ** array [12][12][12]; Consider array, defined above. Which one of the following definitions and initializations of p is valid?  A. char ***** p = array[2]; B. char ** (* p) [12][12] = array; C. const char ** p [12] = array; D. char * (* p) [12][12] = array;  ➤ Ans: B. char ** (* p) [12][12] = array;	used to directly modify an object of object type.  C. Standard C mandates a minimum of two levels of indirection accessible through pointer.  D. None of the above
	<ul> <li>D. char * (* p) [12][12] = array;</li> <li>Ans: B. char ** (* p) [12][12</li> </ul>	indirection accessible through pointer.  D. None of the above



D c = getchar()

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<ul> <li>39. Consider the following code and what is wrong with the below code (assuming the call to malloc does not fail)? char ptr1[] = "Hello World"; char *ptr2 = malloc(5); ptr2 = ptr1; A. There will be a memory overwrite. B. There will be a memory leak. C. There will be a segmentation fault. D. None of the above ➤ Ans: D. None of the above  O. Which one of the following C operators is right associative? A. = B. C. [] D. △ ➤ Ans: C. []  What does the "auto" specifier do? A. It automatically initializes a variable to 0. B. It indicates that a variable's memory will automatically be preserved C. It automatically increments by one (1) the variable when used. D. It automatically decrements a variable to by one.(1)  Ans: B. It indicates that a variable's memory will automatically be preserved</li> </ul>	43. Which one of the following printf() format specifiers indicates to print a double value in decimal notation. left aligned in a 30-character field, to four (4) digits of precision?  A. %-30.4e B. %4.30e C. %-4.30f D. %-30.4f  44. Let considering the following code what will be printed when the sample code below is executed? int x = 0; for (;;) {    if (x++ == 4)     break;    continue; }  printf("x=%d\n", x); A. x=0 B. x=1 C. x=4 D. x=5  Ans: D. x=5  45. According to the standard C specification, what are the respective minimum sizes (in bytes) of the following three data types: short; int; and long? A. 1, 2, 2 B. 1, 2, 4 C. 1, 2, 8 D. 2, 2, 4  Ans: D. 2, 2, 4
How a file is included a system header file called sysheader.h in a C source file?  A. #include <sysheader.h> B. #incl "sysheader.h" C. #includefile <sysheader> D. #include sysheader.h  Ans: A. #include</sysheader></sysheader.h>	46. What will be output when the following code is executed int y[4] = {6, 7, 8, 9}; int *ptr = y + 2; printf("%d\n", ptr[1]); /*ptr+1 == ptr[1]*/  A. 6 B. 10 C. 9 D. 7

Professional Academy	PPSC, NI
Dogar Testmaster	pointers may be subtracted from each other.
47. How many bytes are sold definition below? char txt [20] = "Hello world!\0"; A. 11 bytes B. 12 bytes C. 13 bytes D. 20 bytes  Ans: D. 20 bytes  48. Which one of the following variable names is NOT valid? A. go_cart B. go4it C. 4season D. run4  Ans: C. 4season	D. None of the above  Ans: D. None of the above  None of the following  statements allocates enough space to hold an array of 10 integers that are initialized to 0?  A. int *ptr = (int *) malloc(10, sizeof(int));  B. int *ptr = (int *) calloc(10, sizeof(int));
int a [8] = { 0, 1, 2, 3 }; The definition of a above explicitly initializes its first four elements. Which one of the following describes how the compiler treats the remaining four elements?	C. int *ptr = (int *) malloc(10*sizeof(int));  D. None of the above Ans: C. int *ptr = (int *) malloc(10*sizeof(int));  52. What are two predefined FILE
A. Standard behavior as particular behavior as implementation-dependent.  B. The remaining elements are initialized to zero (0).  C. It is illegal to initialize only a portion of the array.  D. As with an enum, the compiler	A. stdout and stdin B. console and error C. stdip and stderror D. None of the above Ans: D. None of the above
elements by counting the last explicitly initialized element. The final four elements will acquire the values 4, 5, 6, and 7, respectively.  Ans: B. The remaining elements are initialized to zero(0).	53. How is a variable accessed from another file?  A. The global variable is referenced via the extern specifier  B. The local variable is referenced via the global specifier.  C. The static variable is referenced
50. Which one of the following is a true statement about pointers?  A. They are always 32-bit values.  B. For efficiency, pointer values are always stored in machine	via the local specifier.  D. The dynamic variable is referenced via the pointer specifier.  Ans: A. The global variable is referenced via the extern

I MA	
54	When applied to a variable, what does the unary "&" operator yield?  A. The variable's value  B. The variable's binary form  C. The variable's address  D. The variable's data  > Ans: C. The variable's address
55.	Which one of the following is NOT a valid identifier?  Aident B. auto C. bigNumber D. g42277  > Ans: B. auto
57.	Global variables that are declared static  A. Are defined by Standard C B. Internal to the current translation unit C. Visible to all translation units D. Allocated on the heap  Ans: D. Allocated on the heap  Which one of the following is NOT a valid C identifier?  AS B. 1 C1 D. S  Ans: B. 1  According to Standard C, what is the type of an unsuffixed floating-point literal, such as 123.45?  A. Long double B. Unspecified C. Float D. Long int  Ans: C. Float
	Which one of the following is true for identifiers that begin with an underscore?  A. They are generally treated equally by preprocessors and compilers from same identifiers.  B. They are not case-insensitive.

61 Comparison e	1
C. They are reserved for usage by	THE STATE OF
standards libraries.	
None of the above	
Ans: D. None of the above	26
60. Which one of the following is valid	$\mathcal{L}_{\mathcal{L}}$
A. fileOpen (filenm, "read"); B. Open (filenm, "r "); C. fileOpen (filenm, "r ");	80
meopen (hienm " III	
open (Hienm "+").	
Ans: D. fopen (filenm, "r");	1
61. If there is a need to see	
the building from the bucc	
A Garage Stream?	
C fflusho - output()	
Ans: A. flush()  D. dump()	
62 NA.	0
62. What number is equivalent to -4e3?	
В400	
C40 D0004 > Ans: A4000	-10
	-
63. How does variable definition differ	
from variable declaration?	
A. Definition allocates storage for	
a variable, but declaration only	
informs the compiler as to the	
variable's type.	
B. Declaration allocates storage	
for a variable, but definition	
only informs the compiler as to	
the variable's type.	
C. Variables may be defined many	
times but may be defined many	
times, but may be declared only once.	
D. Variable definition must	
precede variable declaration.	
Ans: C. Variables may be	
defined many times, but may learningkidunya.blogspot.com	

referenced via the extern

- der
Dogar Testmaster
64. c = getchar(); What is the proper declaration for what is the proper declaration for what is the proper declaration for
the variable
A. char *c; B. unsigned int c;
C int c;
D. char c; Ans: D. char c;
Can
65 A edited by the user at runtime:  B. text box.
A label. D form.
C. button.  Ans: B. text box.
Ans: B. lext box
66 A VB control used to help keep
related data fields to group box
A. Contained D. radio button
Ans: B. group box
bide all the controls in a group
box: blad property of any
A. set the Enabled property
n cet the Enabled property
control to Title.  C. set the Visible property of the
group box to False.  D. set the Visible property of any
tral to True.
C and the VISIDIC
> Ans: C. set the group box to
False.
68 To disable all the controls in a
A cet the Eliabled Prof
control to False.  B. set the Enabled property of the
Leavito Paint
and the Visible Dioport
hov to ITIE.
D set the Disabled property of the
group box to True.
Ans: B. set the Enabled
property of the group box to
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62	should use to
69	The control you should use to allow the user to choose from a
	allow the user to choose small list of mutually exclusive
	in the
	A check box.
	Ans: B. radio button.
	To add Computer Science to a
70	To add Computer School Combo box named cboDepartments
	A. use the statement cboDepartments.Add("Comput
	Science ).
	the statement
	La Departments, Items, Add
	amputer Science ).
	C. use the statement cboDepartments:AddItems("Co
	mouter Science ).
	- the statement
	choDenartments.Hems.Add.Co
	mputer Science.
	> Ans: B. use the statement
	cboDepartments.Items.Add("
	Computer Science").
	To have the items in a list or
71	combo display in ascending order,
	set the
	True: A. Sorted method
	. Jing property
	B. Ascending property
	C. Sorted property
	D. Selected Index property
	> Ans: C. Sorted property
	When the text box is used for data
72	entry, you should be prepared to
	write code for:
	Write code for.
	A. data validation.
	B. data input.
	C. grouping similar text boxes
	together.
	D giving the user a clue about
	what type of data to enter.
	A data validation.
	Ans: A. data vandation

Dogar Testmaster	200		
The property that determines the order in which a control receives focus is:  A. Tab Order.  B. Tab Sequence.  C. Tab Index.  D. Sort Order.  Ans: C. Tab Index.	75 The asso A. C.	ciated with the: text box. B.	st commonly label. button.
The event that occurs when the form is brought into memory and before the form is displayed is the:  A. Form Open event.  B. Form Load event.  C. Form Click event.  D. Form In Memory event.  Ans: B. Form Load event.			

Computer Science

Computer Science

OBJECT-ORIENTED PROGRAMMING Dogar's Testmaster

Object-Oriented Programming (OOP) is dissimilar from procedural programming languages. Everything in OOP is grouped as "objects" OOP, defined in the purest sense, and is implemented by sending messages to objects.

An object can be considered a "thing" that can perform a set of related activities. The set of activities that the object performs defines the object's behavior. For example, the hand can grip something or a Student (object) can give the name or address.

In pure OOP terms an object is an instance of a class.

1. Modularity: The source code for an object can be written and maintained Objects provide a number of benefits, including: independently of the source code for other objects. Once created, an object can be

2. Information-hiding: By interacting only with an object's methods, the details of its internal implementation remain hidden from the outside world.

- 3. Code re-use: If an object already exists (perhaps written by another software developer), you can use that object in your program. This allows specialists to implement/test/debug complex, task-specific objects, which you can then trust to
- Plug ability and debugging ease: If a particular object turns out to be problematic, you can simply remove it from your application and plug in a different object as its replacement. This is analogous to fixing mechanical problems in the real world. If a bolt breaks, you replace it, not the entire machine.

An interface is a contract between a class and the outside world. When a class implements an interface, it promises to provide the behavior published by that interface. This section defines a simple interface and explains the necessary changes for any class that implements it.

A package is a name space for organizing classes and interfaces in a logical manner. Placing your code into packages makes large software projects easier to manage. This section explains why this is useful, and introduces you to the Application Programming Interface (API) provided by the Java platform.

A class is the blueprint from which individual objects are created.

This is an art; each designer uses different techniques to identify classes. However according to Object Oriented Design Principles, there are five principles that you must follow when design a class.

MULIANS RP. The Single Responsibility Principle learningkidunya.blogspot.com

A class should have one, and only one, reason to change. OCP - The Open Closed Principle -

You should be able to extend a classes behavior, without modifying it.

Derived classes must be substitutable for their base classes.

DIP - The Dependency Inversion Principle-

Depend on abstractions, not on concretions. ISP - The Interface Segregation Principle-

Make fine grained interfaces that are client specific.

Sequential Operation

In sequential operation an object will send message to another object of itself to execute the program. Control will not return to the original sending object until all other messages

Method

Each message has code that linked with it. When an object obtains a message, code is executed. In other words, these messages decide an object's performance and the code determines how the object carries out each message. The code that is associated with each message is called a method. The message name is also called the method name due to its close association with the method.

Object's Data

Each object need to keep the information on how to perform its defined behavior. Some objects also contain variables that support their behavior. These variables are called instance variables. Only the instance method for an object can refer to and change the values stored in the instance variables. The instance methods for other objects cannot refer to this object's data. An object may only access another object's data by sending it

Object-Oriented Problem Solving Approach

Object-oriented problem solving technique is very like to the way a human solves daily problems. It consists of identifying objects and how to use these objects in the correct sequence to solve the problem. In other words, object-oriented problem solving can consist of designing objects whose behavior solves a specific problem. A message to an object causes it to perform its operations and solve its part of the problem.

The object-oriented problem solving approach, in general, can be divided into four steps.

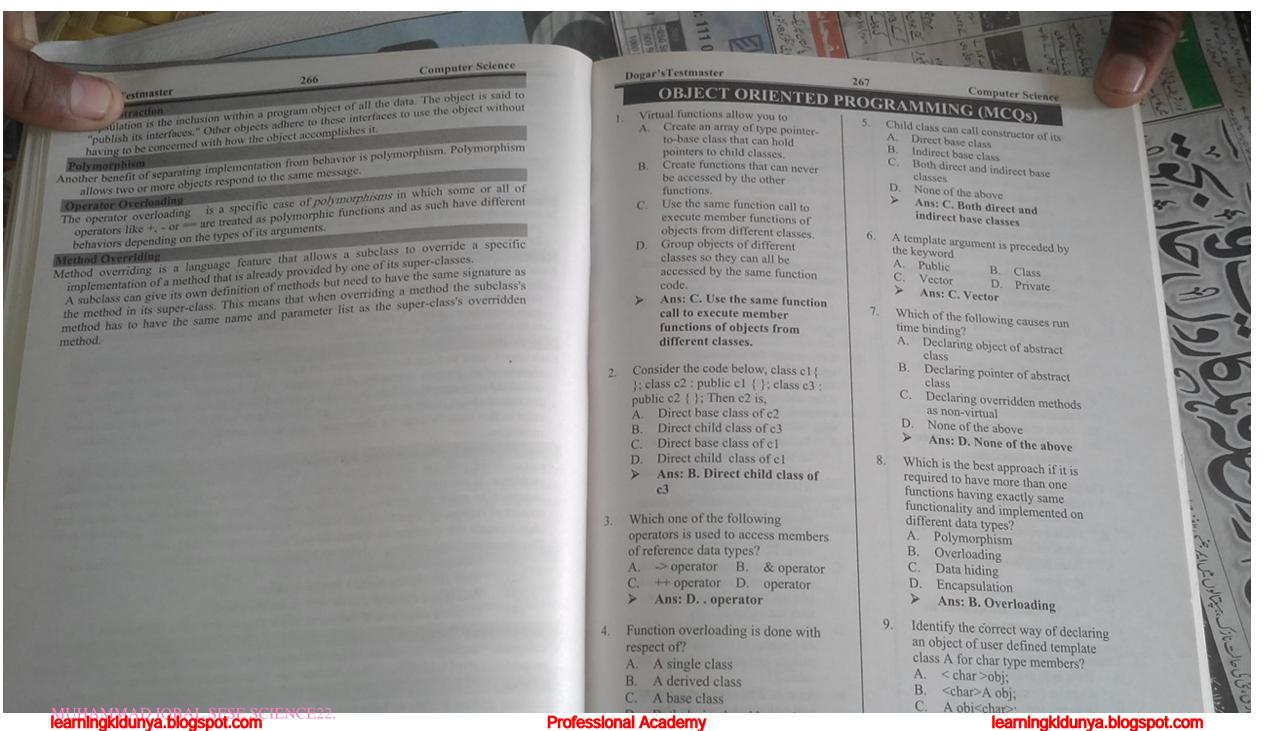
- Spot the objects needed for the solution.
- Recognize messages to be sent to the objects.
- (4) Create a sequence of messages to the objects that solve the problem.

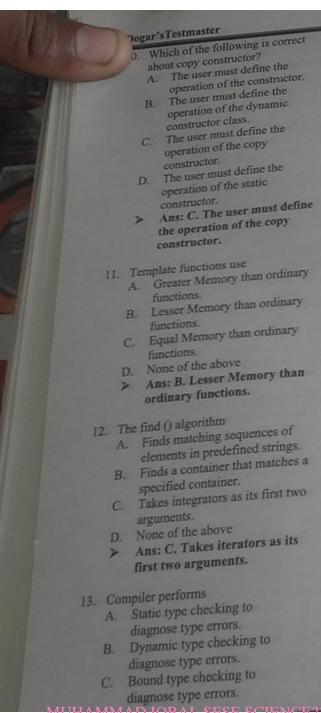
Object-Oriented Paradigm

A computer language is called object-oriented if it supports the four specific object properties called Inheritance, Data Abstraction, Encapsulation, Polymorphism

Inheritance

Inheritance allows a class to have the same behavior as another class and extend or tailor that behavior to provide special action for specific needs.





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	D.	Unbound type checking to diagnose type errors.
		A STATIC LYDIC CHICARA
	>	to diagnose type errors.
14.	W	nich of the following option is
	hoe	t indication about 5
		gramming? Reusability
	A.	Adaptability
	B.	Compatibility
	C. D.	av of the above
	D.	Ans: A. Reusability
		ctors contain contiguous elements
15.	Vec	tors contain
		red as Data type B. Array
		Static variableD. Dynamic
	C.	variable
	A	D Array
16.	Let	consider the following nitialized vector as under
	117711	nifialized vector as
	vec	tor <int>evec; er adding the statment,</int>
	Afte	cpush_back(21);
	eve	at will happen?
		The above statement will add
	A.	an element to the start (the
		back) of evec and will initialize
		it with the value 21.
		The above statement will delete
	B.	The above statement will delete
		an element to the center of evec
		and will reinitialize it with the
		value 21.
	C.	The above statement will delete
		an element to the end (the back)
		of evec and will reinitialize it
		with the value 21.
	D.	The above statement will add
	ν.	an element to the end (the back)
		of evec and initialize it with the
		value 21.
		Ans: A. The above statement
	P	Ans: A. The above statement

will add an element to the

21.

start (the back) of evec and

will initialize it with the value

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D	ogar	'sTestmaster	2
17.	In a	de-queue	
	Α.	deleted at any arbitrary	
		location.	
	В.	at any arbitrary location, but the	
	-	process is relatively slow.	1
	C.	Data cannot be quickly inserted or deleted at either end.	1
	D.		10
		at either end, but the process is	м
	-	relatively slow.	-10
	-	Ans: D.Data can be inserted or deleted at either end, but	- 12
		the process is relatively slow.	
18.		ntify the correct statement	1
	A.	User can use "this" pointer in	
		the constructor in the body and	
		even in the initialization list of	
	-	any class if we are careful.	
	B.	User can use "this" pointer in	
		the constructor in the body of	
	C.	the function.	
	C.	We can use "this" pointer in the constructor in the body and	
		even in the initialization list of	
		any class if we are careful.	
	-	31 011	
	D.		
	-		
		pointer in the constructor in	
10		the body and even in the	
		initialization list of any class	
		if we are careful.	
19.		fault constructor is such	
	con	structor which has no	
	A.	Temporary constructor B.	
	-	Default parameter	
	C.	Parameter	
	D.	None of the above	
	8	Ans: C. Parameter	
20.	Pub	lic methods of base class can	
	A.	Directly be accessed in its	
		derived class	
	B.		
		derived class	
		derived class	

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	-	sTestmaster	269	E
7.	In a	de-queue	Computer Science	
	A.	Data can be quickly inserted or	C. Simultaneously be accessed in	
		deleted at any arbitrary		
	D	Data can be inserted or deleted	D. Cannot be access in derived	9
	D.	at any arbitrary location, but the	Ans: A. Directly be accessed	7 4
		process is relatively slow.	in its derived class	PA
	C.	Data cannot be quickly inserted		
	-	or deleted at either end.	21. The type which is used to declare a pointer is called its	
	D.	Data can be inserted or deleted	A. Public time P	
		at either end, but the process is	A. Public type B. Private type C. Default type B.	_
		relatively slow.	C. Default type D. Reference	
	>	Ans: D.Data can be inserted	Ans: D. Reference type	DY.
		or deleted at either end, but		
		the process is relatively slow.	22. Which of the following members are	
0	Iden	tify the correct statement	Somewhere between public and	20
0.	A	User can use "this" pointer in	private members?	
	-	the constructor in the body and	A. Protected members	
		even in the initialization list of	B. Public as well as private	NO
		any class if we are careful.	members	
	B.	User can use "this" pointer in	C. Private members	0
		the constructor in the body of	D. Global members	116
		the function.	A. Protected members	3/
	C.	We can use "this" pointer in the	23. Which of these are error handling	
		constructor in the body and	techniques?	
		even in the initialization list of	A. Abnormal Termination B.	
		any class if we are careful.	Graceful Termination	
	D.	None of these.	C. Return the illegal D. All of	
	>	The state of the s	the above	
		pointer in the constructor in	> Ans: D. All of the above	
		the body and even in the		1 1000
1		initialization list of any class	24. Which of the following try block to	E \ 1
		if we are careful.	catch the object thrown?	19-1
	-	1	A. Throw block B. Object	7
9.		ault constructor is such	block	8
	100000	structor which has no	C. Catch block D. Try block	مناجيتالول ميل ايمه جنم
	A.	Temporary constructor B.	Ans: C. Catch block	17:
		Default parameter		13
	C.	Parameter	25. Graphical representation of the	16
	D.	None of the above	classes and objects is called object	16
	>	Ans: C. Parameter	model that shows	6
			A. Class Name only	1 6
0.	Pub	lic methods of base class can		
	A.	Directly be accessed in its	and attitudes	31
	133	derived class	C. Relationships of the objects and	i i
	D		classes	1
	В.	y a manage in 160	D. All of the above	Ć-
		derived class	Ans: D. All of the above	1
		Management of the Park of the	The state of the s	

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programming approach to
functions as a sented tasks?
perform action-oriented  A. Structured programming
A. Structured programming B. Modular programming C. Procedure-oriented
programming
D. Object-oriented pro-oriented
> Ans: C. Floor programming
Caba following OOP
27. Which one of the following OOP concepts enables reusability of
components?
A Inheritance
p Encapsulation
C. Polymorphism
D. All of the above  Ans: A. Inheritance
28. The concept of hierarchical
classification is related
A. Abstraction
B. Inheritance C. Function overloading
Ans: B. Inheritance
Langerenming
29. Object-based programming
languages do not support
A. Polymorphism
B. Dynamic binding
C. Encapsulation
D. All of the above  Ans: B. Dynamic binding
30. Information hiding can be achieved
through
A. Inheritance
B. Constructor class
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	PPS
270	Computer Science
270	A good model is that which
	Loosely related to
	No. of the second secon
E	openly related to a real life Openly related to a real life
	problem.
C	Closely related to a real life
	problem. None of the above
D	Ane C Closely related to a
-	real life problem.
	cal a following feature of
32. W	OP is used to derive a class from
0	OP is used to dela
	other? Polymorphism
A.	o -landing
B.	- tinding
C. D.	Inheritance
D.	. D Inheritance
33. W	hich of the following is a weak
rel	ationship between two objects?
Α.	Data hiding
В.	Composition
C.	Aggregation
D.	None of the above
A	Ans: C. Aggregation
	ich one is a class association?
34. Wh	ich one is a class association
A.	Multiple Association
B.	Inheritance
C.	Child association
D.	Parent association
>	Ans: B. Inheritance
	pose there is an object of type
35. Sup	pose there is the following can
Pers	son, which of the following can
be c	onsidered as one of its attributes
A.	Name
B.	Experience
C	Work()
C.	None of the above
NCE24	None of the above

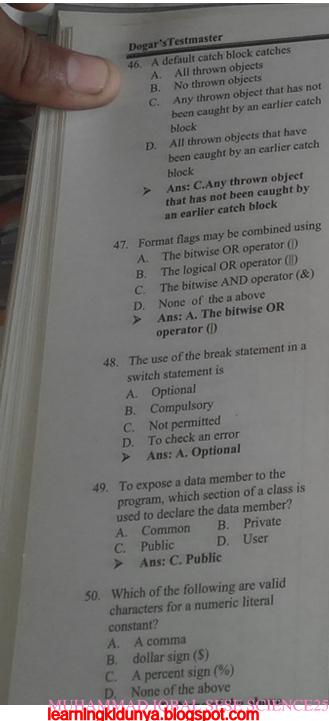
, NIS IESI N	MASTER
	Dogar'sTestmaster
30	
37	d. By the use of ence can obtained A. Information B. Least interde classes C. Implementati
100	D. All of given  Ans: Inform
200	In constant memb type of this pointe A. Constant poi object B. Constant poi C. Constant poi D. Constant poi Ans: Consta object  What is best meth common behavior from the given cla separate class of t behaviors and attr A. Generalization
40	B. Sub-typing C. Specialization D. Abstraction Ans: A. Ger
40.	The ability to der more than one cla A. Single inher B. Abstraction C. Multiple inh D. None of the

	asso	ociation?
	A.	Multiple association
	В.	Inheritance
	C.	Inheritance Collection of objects All of the above
	>	Ans: D. All of the above
37.	. By t	he use of encapsulation a user
	Con	obtanicu
	A.	Information hiding
		Least interdependencies among classes
	C.	Implementation independence among modules
	D.	All of given options
	A	Ans: Information hiding
38.	In co	onstant member function the
	type	of this pointer is
	A.	Constant pointer to constant object
	B.	Constant pointer to object
	C.	Constant pointer to class
	D.	Constant pointer to static object
	A	Ans: Constant pointer to
		object pointer to
20	Who	t is boot west. I
39.	willa	t is best method to extract
	Comi	mon behavior and attributes
	Irom	the given classes and make a
	sepai	rate class of those common
	beha	viors and attributes?
		Generalization
	B.	Sub-typing
	C.	Specialization
	D.	Abstraction
	>	Ans: A. Generalization
		1
40.	The a	ability to derive a class from
	more	than one classes is called
	A. ,	Single inheritance
		Abstraction
		Multiple inheritance
	D	None of the above
	7	Ann Male 1
	-	Ans: Multiple inheritance
I Acad	demy	

Which one is not an object

The second secon	
271	Computer Sc
41. If My Class h	las a dage
C. My-Cla	ss B. ~MyClass ass D. MyClass
> Ans: B	~MyClass-
valid class d	rect statement about a
A. Class a	declaration?
B, Class	abcO:
C. Class;	abc()
D. None	of the above
Ans:	C. Class abc{};
43. With no us	sing Deep copy
constructo	
A. Syste	em crash problem will
occur	
occu	nory Leakage problem will
occu	gling pointer problem will
	of the above.
> Ans	s: All of the above.
44. If only o	one behavior of a derived
Class is i	incompatible with base class,
then it is	
	eneralization
B. Sp	ecialization
	ostraction
D. 51	ngle inheritance
A	ns: Specialization
45. Which	may not be an integral part of
an obje	ect?
	tate
	Behavior
	Protected data members
	All of the above
	Ans: All of the above
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## PPSC, NTS TEST MASTER



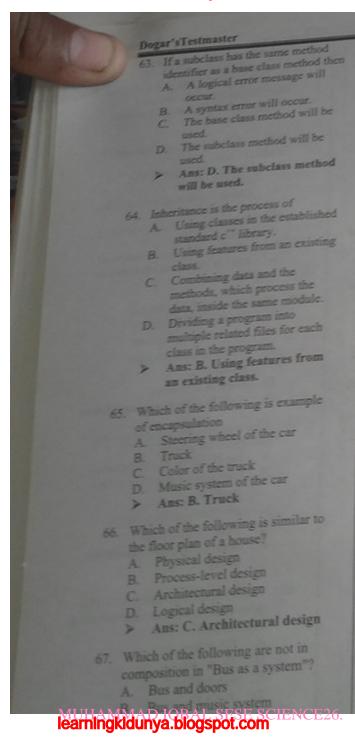
272	Computer Science	
Name of Street	A function that changes the state of	
51.	the cout object is cance u(ii)	
	A Member B.	
	- Operand D. Managerator	
	> Ans: D. Mampaiato	
52.	Identify the correct statement	
	A. Interfaces cannot be a semblers.	н
	B. Interfaces can have dynamic members.	
	Interface can use object classes	
	None of the above	
	Ans: A. Interfaces cannot	
	have static members.	۰
53	An object can be defined as	
33.	A. A combination of message and	
	data.	
	B. A combination of data types.	
	C. A combination objects.	
	D A combination of Array	
	Ans: A. A combination of	
	message and data.	
54	A class can best defined as	
54.	An abstract representation of	
	something with certain	
	properties.	
	arata representation of	
	B. A concrete representation of something with certain	
	properties.	
	- Latract representation of	
	c. An abstract representation of something with certain	
	something with certain	
	properties and abilities.	
	D. None of the above	
	> Ans: C. An abstract	
	representation of something	
	with certain properties and	
	abilities.	

MOTER		rour study
Dogar'sTestma	Ster	10 85 BM SEE
	TO STATE OF THE PARTY OF THE PA	273
5. What is the d	lifference between	Computer C-1
A. Assignn	nd initialization?	an inches
many u	nent can be done as mes as desired whereas	
initializa	ation can be done only	C. Through the object of that class D. Through the this open
Once.		D. Through the this operator  Ans: B. Through the solution of the this operator
B. Assignn	nent can be done when	Ans: B. Through an instance
minanz	ation can be done	
C. Assignn	mes as desired. nent can be done only	59. Which of the following is true about
once wh	nereas initialization can	abstract class
be done	as many times as	A. Abstract class cannot be
desired.		micrited
D. None of	the above.	Tostiact class can be and
Ans: A.	Assignment can be	
done as	many times as desired	C. Abstract class can be access by static variable.
done or	s initialization can be	D. Abstract class can be inherited.
What is an er	ncapsulation?	Ans: D. Abstract class can be
A. An actio	on or occurrence such as	inherited.
click	steamence such as	
B. A packa	age of one or more	60. Choose one of the following
compon	ents together	Struct is encapsulation
C. A set of	statements that	B. Class is encapsulation
perform	s specific task on static	C. Functions is hiding the
objects.		parameters.
D. A refere	ence type variable which	D. None of the above
cannot o	lereference.	Ans: B. Class is encapsulation
➤ Ans: B.	A package of one or	
more co	omponents together	61. Which among the following is not
Which of the	following:	true about interfaces?
about the nev	following is correct	A. Interface can have properties
A Heed to	create objects on the	B. Interface cannot have access
hean an	d invoke constructors	modifiers
B. Used to	hide an inherited	C. Interface can have fields
member	from a base class	D N and a second nave fields
member		D. None of the above
C. A and B		Ans: C. Interface can have
		fields
	the above	62 TL D
Ans: C.	A and B	62. The Boolean expression A >= B is
Sunnose clas	s an implements	equivalent to which of the following
interfece II	s an implements	expressions?
interface II.	The class explicitly	A. !(A > B)
implements a	member of I1. Which	B. (B >= A)!
method is to	use to access this	C. !(A < B)
member?		D. A <= B
A. Through	a class instance	A Ann C 1(1 an)

B is

llowing

# MUHAMMAD IORAL SESE SCIENCE26 PPSC, NTS TEST MASTER



		1130,1113
	1860	Computer Science
	D.	Bu and gears
	7	Ans: B. Bus and music system
10	100	ess to private data or private
68.	met	Souds 10
	A	Restricted to objects of the
	-	same class.  Restricted to methods of other
	В.	elasses.
	C.	Restricted to member of other
		Restricted to the data types of
	D.	the other class.
	>	Ans: B. Restricted to method
	7	of other classes.
500		other name of data in a class is
59.	A	Objects
	B.	Fields
	C.	Access identifier
	D.	Instance
	>	Ans: B. Fields
10.	Info	ormation hiding is the theory of
	A	Declaring all significant data as
		public
	B.	Storing information in private
		data fields.
	C.	Storing information in public
		data fields.
	D.	Storing data in object classes.
	>	Ans: B. Storing information
		in private data fields.
1	Me	thods are best defined as
1-	A.	A sine madulas that conti
	220	private variables.
	B.	Class variables that store
	-	information.
	C	Action modules that process
		data.
	5	Class which contained public
	D.	variable.
	-	Ans: C. Action modules that
	8	Ans: C. Action modules dia

Dogar's Testmaster
72. Class merhods
72. Class methods are usually used when
A. Multiple copies of the class
needs to be loaded  B. Multiple
D. Multiple copies of too
a class are required.  C. Single core.
C. Single copy is necessary to pass information to the methods.
The Popular Tributary
> Ans: B. Multiple copies or instances of
instances of a class are required.
73. When is a constructor calls to
A. Each time the constructor
identifier is used in a program
statement a program
B. During the declaration of a new
C. During the instantiation of a
61000
D. At the time of program
CACCULION
> Ans: C. During the
instantiation of a class
74. What is an overloaded constructor?
A. A constructor with too many
program statements
B. A second constructor with the
same signature heading as the
first constructor.
C. A constructor with a different
identifier than the first
constructor.
D. A second or other multiple
constructors with a different
signature than any other
constructor.
Ans: D. A second or other
multiple constructs
multiple constructors with a

THE RESERVE OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAME	혛
75	
75. Instantiation	
75. Instantiation is the moment that  A. Memory is de-allocated for a  specific chiant.	
	,
thember of a steel	
A program which to	20
	=
D. A memory is allocated for a	0
> Ans: D. A memory is	_
Amorated for a source.	
of a class.	0
76. Object Oriented Programming is	
	5
" LOCENCIATION D	4
and the state of t	•
	4
Ans: D. All of the above	3
77. An object is better defined as	8
**- 11 15 3 TICPF A.C	
It is combination of both day	-
data tunctions of these -1	
C. It is one instance of a more	
general data type.  D. It is a station	
D. It is a static member of the	1
Ans: C. It is one inct.	
more general data type.	-
78. The course of	5
78. The scope of an object is A. Within that also	12
A. Within that class in which it is defined.	300
	A
B. Total number of data attributes used by an object.	1
C. Range of assession	* E
C. Range of accessing member methods.	3.0
D. None of the above.	10

process data.

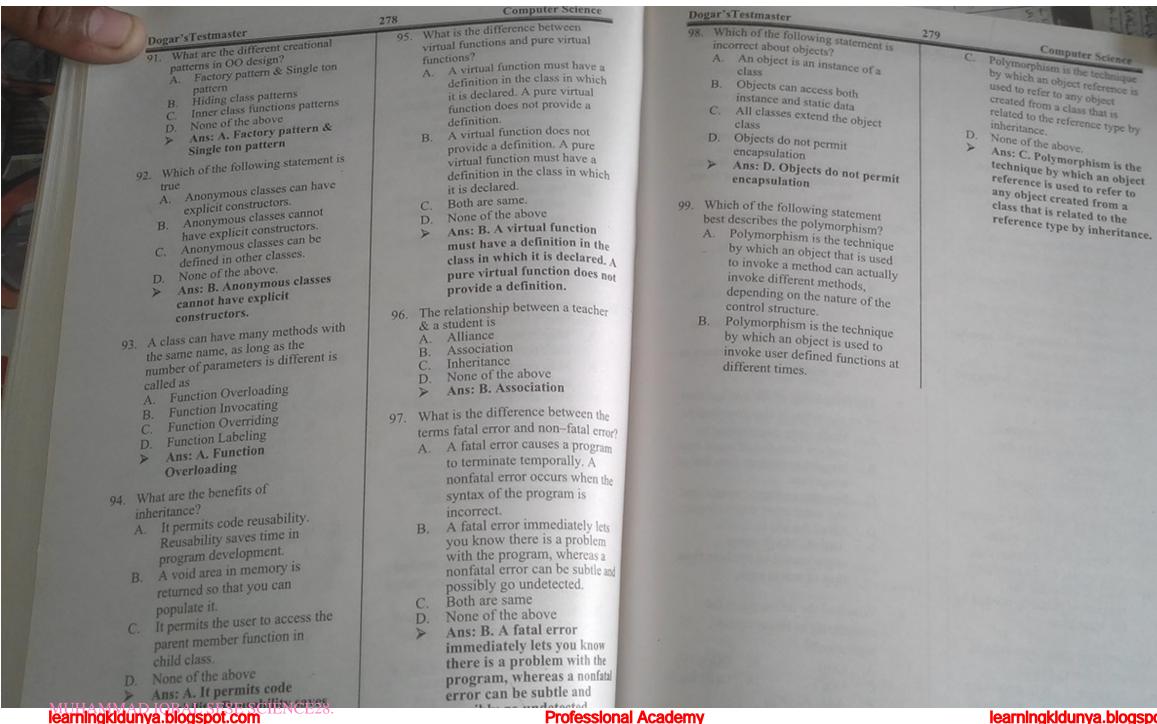
1 Totossional Alexadomy
ar'sTestmaster
An array is a defined as  A. Data structure with one, or more, elements of the different
B. Data structure with FIFO access type. C. Data structure, which allows transfer between heap and
stack.  D. Data structure with one or more elements of the same types.  Ans: D. Data structure with one or more elements of the
one or more
same types.  80. Object methods are typically used
when of the class
A Multiple instance of the
are required.  B. Multiple copies of a class are
required.
C. A single copy of the class is required to be loaded.
D. None of the above  Ans: C. A single copy of the class is required to be loaded.
81. While simple data types are used as
parameter passing then,  A. The current and old value of the simple data type's variable is
copied.  B. The initial value of the simple data type's variable is copied.
C. The actual current value of the simple data type's variable is
copied.
D. None of the above.
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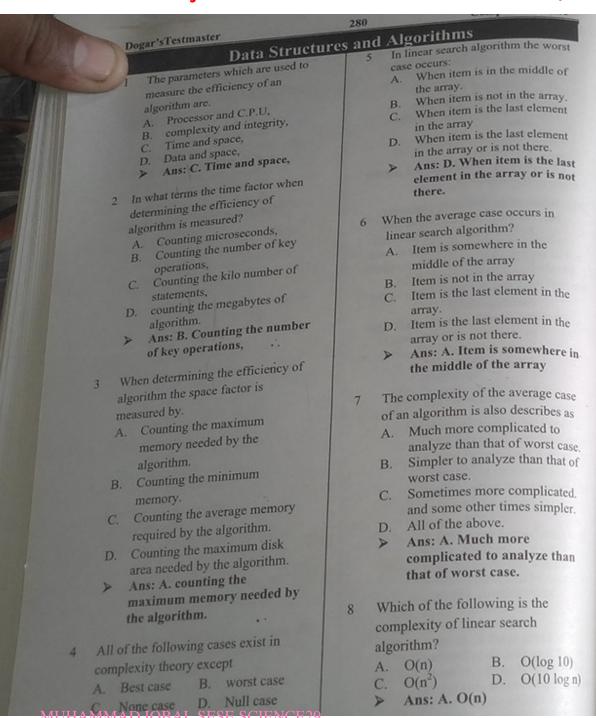
	Computer Science
276	When objects are used for parameter
82	
	attributes of the object are
	B. The initial values of the object
	B. The initial values of instantiation information are
	TELETICIO TITLO
	the object information is stored
	is copied.  D. A new object of the same class
	D. A new object of the same as the parameter object is
	as the parameter of instantiated.
	A The current values of
	the data attributes of the
	object are copied.
02	A class is best defined as
83.	The recent defined function.
	It combines both data and the
	methods that act upon the data
	in the same module.
	C It is one instance of a more
	general data type.
	D. In one instance of the static
	iable
	Ans: B. It combines both data
	and the methods that act
	upon the data in the same
	module.
84.	Which of the following shows
04.	correct syntax to create an object of
	the Piggy class?
	- new form = new P199V()
	p: new tom():
	B. New Piggy - new tomo,
	C. Piggy tom = new Piggy();
	D. Tom new = new Piggy;
	> Ans: C. Piggy tom = new

Piggy();

ESI M/	
<u>De</u> 85	
	I
	l
86. S	l
D >	l
87. A wh A.	
В.	
C.	

ar'sTestmaster While using method overriding, which of the following statement is Computer Science Uses the class identifier only to access object identifier Number of parameters determines which version of an Ans: C. May be called with the method identifier only in overridden method is invoked. The instance of the class certain conditions. determines which version of an 88. Polymorphism minimizes the overridden method is invoked. attempt required to expand an object The class determines which version of an overridden Coupling objects together more method is invoked. The object reference determines Enabling a number of different which version of an overridden operations to share the same method is invoked. name Ans: C. The class determines Enabling a number of which version of an operations to share the same overridden method is invoked. Eradicates the obstacle forced by encapsulation. The dowhile loop is ideal for loop Ans: B. Enabling a number of ructures when we want it different operations to share Must repeat some process a the same name fixed number of times. 89. Object Oriented Programming is Must execute some process at least one time. best defined as Must check the loop condition A. It makes programs more before the loop body is reliable. B. It simulates real life. executed. Must check the loop condition C. It uses a lot of intimidating after the loop body is executed. vocabulary, which is not as bad Ans: B. Must execute some as it sounds. process at least one time. D. None of the above Ans: B. It simulates real life. class method call is necessary 90. What is anonymous class? A. Class defined inside a method May be called with the method identifier when executing user without a name It is instantiated and declared in defined data types. May be called with the method the different place and can have identifier when executing user explicit constructors C. It is declared with in the same defined functions. May be called with the method class and can access in different identifier only in certain fuctions.

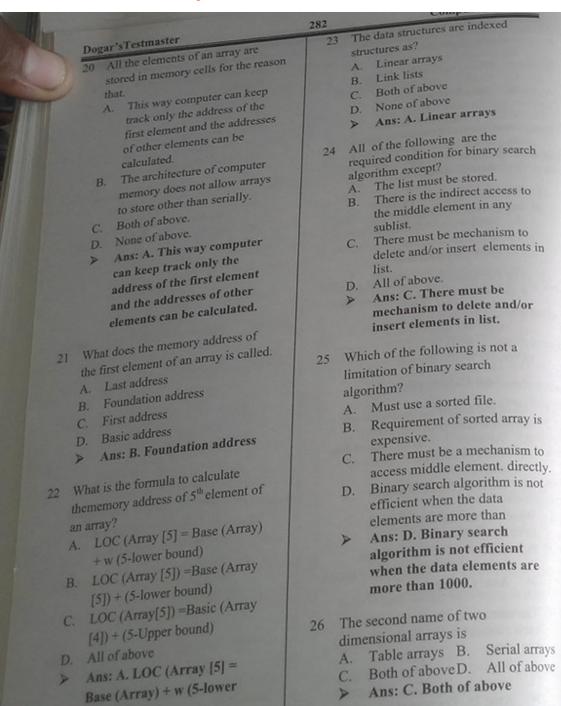




D	ogar'sTestmaster		
9	Which of the fo	llowing	ie th
	somplexity Of [	pinary se	arch
	argoritmin;		
	A. O(n) C. O(n <sup>2</sup> )	В.	O(log)
	Ans: B. O		O(10 log n)
10	Which of the fo	llowing	is the
	complexity of b	bubble so	ort algorith a
	A. O(n) C. O(n <sup>2</sup> )	D.	O(100 2)
	> Ans: C. O		O(n log n)
11	Which of the fo		
	complexity of r	nerga	is the
	complexity of n		
	C. O(n2)		O(10log n)
	> Ans: D. O	(n loo r	O(n log n)
12	The circuitous	alter of t	the values of
	a variable in on	e modu	le by another
	module is called	4	Journel
	A. Internal ch	ange	
	B. Inter-mode	ile chan	ige
	C. Side effect		
	D. External up	pdate	
	Ans: C. Si	de effe	ct
13		ving da	ta structure
	are linear data s	tructure	excent?
	A. Arrays	R	Timb to
	C. Both of ab	oveD.	None of
	above		
	Ans: D. No	one of a	above
14	Which of the fo	llowino	data
	structure is linea	ar?	Guid
	A. Tree		Cuant
		D.	Graph
	C. Array	D.	All of above
	Ans: C. A	Tay	
15	The operation of	f proce:	ssing
(	each element in	the list	is also
1	cnownas.		WISO .
1	A. Sorting	B.	Toloin
	C. Inserting		8
	THEFTHIE	D.	Traversal

Computer Science 16 The location of the element with a given value is which of the following. A. Traversal B. Search C. Sort and search D. All of above > Ans: B. Search 17 Why Arrays are best data structures? A. For relatively permanent collections of data B. For the size and the data in the structure are constantly changing C. Not of above situation D. None of above situation Ans: A. For relatively permanent collections of data 18 Linked lists are most suitable for A. For relatively permanent collections of data B. For the size and the data in the structure are constantly changing C. Both of above situation D. None of above situation Ans: B. For the size and the data in the structure are constantly changing 19 Each array declaration need not give information about. A. Name of array B. The data of array The first data from the set to be stored D. The index of the array

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IE	SIMASIER
I	ogar's l'estmaster
2	A variable P is known as pointer if A. P contains the address of an element in DATA B. P points to the address of first element in array. C. P can store only one memory addresses. D. P contain the DATA and the address of DATA.  > Ans: A. P contains the address of an element in DATA
28	data structure cannot store the non- homogeneous data elements?  A. Arrays B. Records C. Pointers D. All of the above  Ans: A. Arrays
29	Which of the following option about data structure stores the homogeneous data elements?  A. Array  B. Records  C. Pointer  D. All of the above  Ans: B. Records
30	Each data item in a record can be a group item composed of sub-items is known as.  A. Elementary items B. Atoms C. Scalars D. All of above  Ans: D. All of above
31	What is the difference between linear array and a record?  A. An array is suitable for homogeneous data but hte data items in a record may have different data type.  B. In a record, there may not be a natural ordering in opposed to linear array.

ogar's l'estmaster		A 10
A variable P is known as pointer if	283	9 6
A. I contains the address of	C. A record S	
element in DATA	C. A record form a hierarchical structure but a lienear array does not.	平等 行
B. P points to the address of first element in array.	does not.	を変し
C. P can store only one memory	D. All of above.	1810
addresses,	Ans: D. All of above.	
D. P contain the DATA and the	32 All of the following statements are true accept?	5-54
address of DATA.  > Ans: A. P contains the	true accept?	
address of an element in	A. Arrays are dense listed and	-6 V
DATA	static data.	-31
	B. Data elements in linked list	25
Which of the following option about	need not be stored in	3
data structure cannot store the non- homogeneous data elements?	adjecentspace in many	
A. Arrays	Tomicis store the part 1	(217
B. Records	Cicilical of a lies	
C. Pointers	D. Linked lists are collection of	
D. All of the above	and houes that contain	20
> Ans: A. Arrays	information part and part	
Which of the following option about	pointer.	
data structure stores the	Alis. C. Pointers stowe at	
homogeneous data elements?	next data element of a list.	
A. Array	33 Binary search algorithm can be	00
B. Records	applied to all of the land	3115
C. Pointer	applied to all of the below except  A. Sorted linked list	
D. All of the above	B. Sorted bines	
> Ans: B. Records	office offiary trees	
Fork data itam in a second	C. Sorted linear array	
Each data item in a record can be a	D. Pointer array	
group item composed of sub-items is known as.	Ans: A. Sorted linked list	
A. Elementary items B. Atoms	men new data are to be inserted	5
C. Scalars	into an old existing data structure,	E.   1
D. All of above	but there is no space; this situation is	5
> Ans: D. All of above	known as.	1.6.
Aus. D. All of above	A 11-1-0	E / .
What is the difference between	C C C C C C C C C C C C C C C C C C C	ایم نظاند کا ایک منسی ایم جنسی کا نظافیات
linear array and a record?	C. Super flow D. Saturated	100
A. An array is suitable for	Ans: B. Overflow	37
homogeneous data but hte data		361
items in a record may have	35 The condition when a linked list	130
different data type.	START=NULL is known as	36
B. In a record, there may not be a	1 74 7 7 7	Sik-Job Co
natural ordering in in the a	C C C C C C C C C C C C C C C C C C C	1. C.
natural ordering in opposed to	C. Superflow D. Saturated	8 C
linear array.	Ans: A. Underflow	5 5
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### PPSC, NTS TEST MASTER **Professional Academy** Computer Science 42 The data structure which allows deletions at both ends of the list but Dogar'sTestmaster 36 Which of the given option is a two insertion at only one end is called. A. Input-restricted deque B. Output-restricted deque Prior queues D. All of above

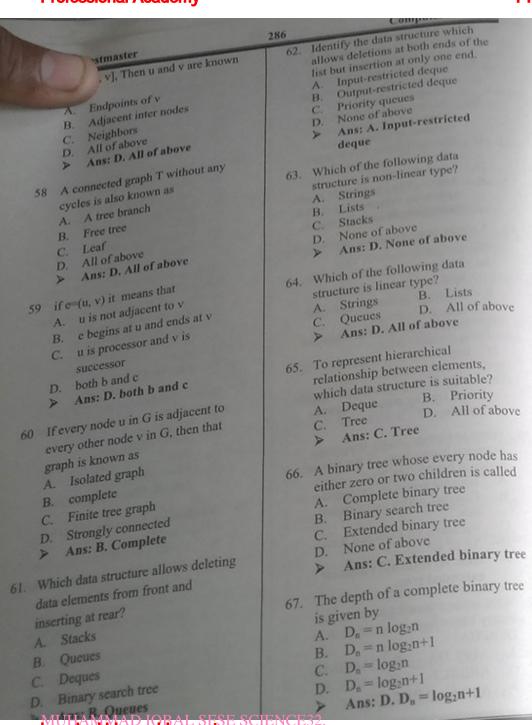
- A. Grouped header list B. circular trailer list
  - Linked list D. None of
  - Ans: D. None of above
- 37 Which of the following option has no relation with stacks? A. FIFO lists B. LIFO D. Push-down C. Piles Ans: A. FIFO lists
- 38 The "push" and "pop" is correlated to which of the given?
  - A. Array D. None of Stacks
  - above > Ans: C. Stacks
- 39 The elements which can be added or removed at either end but not in the middle, this type of data structure is
  - A. Linked lists B. Array D. Deque C. Queues
  - Ans: D. Deque
- 40 In order to traverse a tree resulted E ACKFHDBG; the preorder traversal would return.
  - A. FAEKCDAHG B. FAEKCDHGB
  - C. EAFKHDCBG FEAKDCHBU
  - Ans: B. FAEKCDHGB
- Which type of data structure allows deleting data elements from front
  - Queues Arrays D. Binary Deques
- Search Tree(BST) Aus: B. Queues

- Ans: A. Input-restricted deque
- 43 Which of the given option is a data structure which is non-linear? B. Array
  - String Stack
- D. None of
- above Ans: D. None of above
- 44 Which of the following option is a data structure which is linear?
  - A. String
- B. List D. All of above Queue
  - Ans: D. All of above
- 45 Which data structure is suitable to represent hierarchical relationship between elements?
  - A. Deque B. Array
  - D. None of Tree above
  - Ans: C. Tree
- 46 A binary tree whose every node can have zero is known as:
  - Complex binary tree B Binary search tree
  - Extended binary tree D. All of above
  - Ans: C. Extended binary tree
- 47 The formula for the depth of a complete binary tree is
  - A.  $D_n = n \log_2 10 \text{ B}$ .  $D_n = n$ log<sub>2</sub>n+1
  - $D_n = log_2 10$  D.  $D_n =$ log2n+1
  - Ans: D.  $D_n = \log_2 n + 1$

48 Any algebraic expression E which uses only binary operations in a 2tree can be represented as

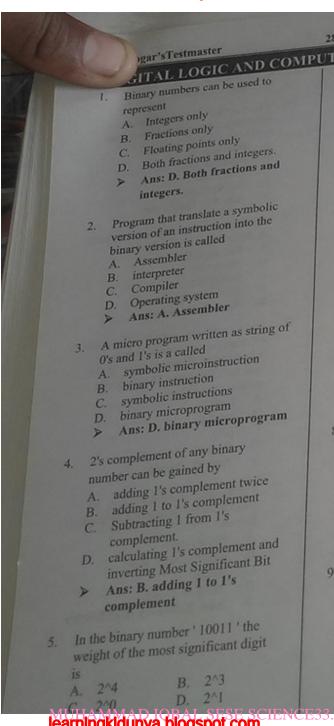
- A. The variable in E will appear as external nodes and operations in internal nodes.
- B. The operations in E will appear as external inter nodes and variables in internal nodes.
- The variables in E will appear only in internal nodes.
- All of above.
- Ans: A. The variable in E will appear as external nodes and operations in internal nodes.
- 49 A binary tree can simply be changed into q 2-tree by
  - A. Replacing each empty sub tree by a new internal internode.
  - B. Inserting an internal nodes for non-empty nodes.
  - C. Inserting an external nodes for non-empty node.
  - D. Replacing each empty sub tree by a new external node.
  - Ans: D. Replacing each empty sub tree by a new external node.
- 50 When to change binary tree into extended binary tree, all the unique nodes in binary tree are.
  - A. Internal nodes on extended tree.
  - External nodes on extended tree.
  - Vanished on extended tree.
  - All of above.
  - Ans: A. Internal nodes on extended tree.
- 51 What is the pre order traversal of binary tree whose post order is DEBFCA?
  - A. ABFCDA B. ADBBEC
  - ABDECF D. ABECEF
  - Ans: C. ABDECF

- 285
  - Computer Science Which of the given option is a sortingalgorithm of divide-andconquer form?
    - A. Switch sort
    - Insertion sort Quick sort
    - None of above Ans: C. Quick sort
  - 53 A directly or indirectly algorithm also called.
    - A. Sub algorithm
    - Recursion
    - Reverse notation
    - Traversal algorithm Ans: B. Recursion
  - 54 When in a binary tree, certain null entries are swaped by special pointers which point to nodes higher in the tree for efficiency; these special pointers are known as
    - A. Leaf B. Array C. path Thread
    - D. Ans: D. Thread
  - 55 In order traversal of tree will give up a sorted listing of elements of tree in.
    - Binary tree
    - Binary search tree
    - C. Heap
    - All of above
    - Ans: B. Binary search tree
  - 56 Which of the following is related to a Heap tree?
    - A. Values in a node are less than every value in left sub tree and smaller than right sub tree
    - B. Values in a node are greater than every value in children of it
    - C. Both of above
    - D. None of above
    - Ans:B. Values in a node are greater than every value in children of it



PPS	C, I
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y tree	1
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IES	DIWASIER	Tour Study Partite
68.	When representing any algebraic expression E which uses only binary operations in a 2-tree,  A. the variable in E will appear as external nodes and operations in internal nodes  B. the operations in E will appear as external nodes and variables in internal nodes  C. the variables and operations in E will appear only in internal nodes  D. the variables and operations in E will appear only in external nodes  Ans: A. the variable in E will appear as external nodes and operations in internal nodes  Ans: A. the variable in E will appear as external nodes and operations in internal nodes  A binary tree can easily be converted into q 2-tree  A. by replacing each empty sub tree by a new internal nodes for non-empty node  C. by inserting an internal nodes for non-empty node  D. by replacing each empty sub tree by a new external node  Ans: D. by replacing each empty sub tree by a new external node  Ans: D. by replacing each empty sub tree by a new external node	Computer Science  A. ABFCDE B. ADBFEC C. ABDECF D. ABDCEF  Ans: C. ABDECF  Ans: C. ABDECF  72. Which of the following sorting algorithm is of divide-and-conquer type? A. Bubble sort B. Insertion sort C. Quick sort D. All of above  Ans: C. Quick sort  73. An algorithm that calls itself directly or indirectly is known as A. Sub algorithm B. Recursion C. Polish notation D. Traversal algorithm  Ans: B. Recursion  74. In a binary tree, certain null entries are replaced by special pointers which point to nodes higher in the tree for efficiency. These special pointers are called A. Leaf B. branch C. path D. thread  Ans: D. thread
70.	When converting binary tree into extended binary tree, all the original nodes in binary tree are  A. internal nodes on extended tree  B. external nodes on extended tree  C. vanished on extended tree  D. None of above  Ans: A. internal nodes on extended tree	75. The in order traversal of tree will yield a sorted listing of elements of tree in  A. Binary trees B. Binary search trees C. Heaps D. None of above  Ans: B. Binary search trees
71.	The post order traversal of a binary tree is DEBFCA. Find out the pre order traversal	J. W. J. C. W. S. C.

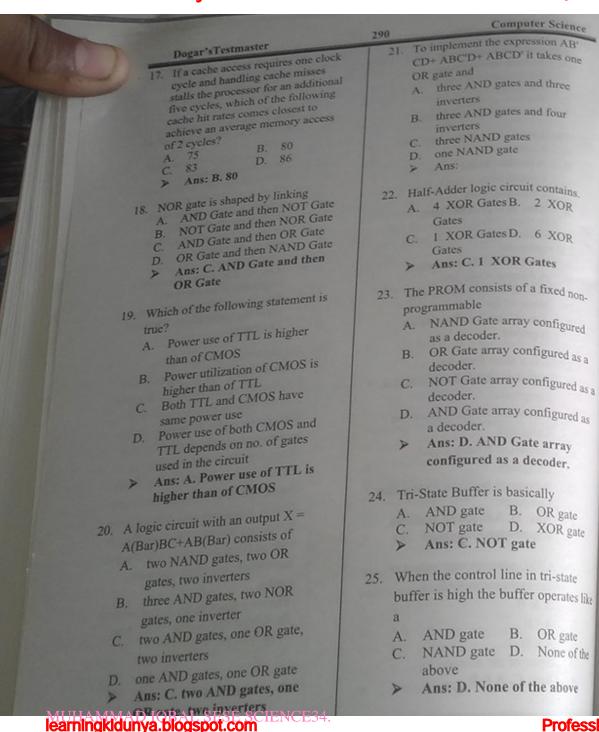


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	100	Computer Science
38	-	RGANIZATION (MCQs)
E	R O	ne output of the expression Logic when
6	Th	A+B+C will beLogic when
		o I ( =   Willie 3)
	he	re represents OR Out
	A.	Undefined
	B.	
	C.	None of the above
	D.	
7.	Th	e binary numbers A = 1100 and B
	== 1	001 are applied to the inputs of a mparator. What will be the output
	COL	mparator. What will
		els? A > B = 1, A < B > B = 0
	A.	0.0 < B = 1.0 = 0, A <
	D-	
	C.	B = 1, A - B = 0 A > B = 1, A < B = 0, A = B = 0
		A > B = 0, A < B = 1, A = B =
	D.	
	-	Ans: C. $A > B = 1$ , $A < B = 0$ ,
	A	A = B = 0
3.	Flo	ating point representation is used
	to s	tore
	A.	Boolean values
	B.	ergative integers
	C.	Real numbers
	D.	Positive integers
	>	Ans: C. Real numbers
	Whi	ich one of the following is
	inco	orrect about Boolean algebra?
	A.	A = A'
		AA = A
		A + 1 = 1
		A + 0 = A

> Ans: A. A = A'

		IASTER	
D		'sTestmaster	28
10	D. The form A. B. C. D.	Boolean subtraction Boolean division Boolean addition	
11	. Th	e Boolean expression AB'CD'is	
	Α.		
	В.	A product term	
	C.	a literal term	
	D.	a binomial term	
	>	Ans: B. a product term	
12	. Th	e Boolean expression X = AB +	
		represents	
	A.		
	B.	A 4-input AND gate two ANDs OR ed together	
	C. D.	None of the above	
	D.	Ans: C. two ANDs OR ed	
		together	
13.	AB	EL is a short form for	
	Α.	Advanced Broadband Enabled	
		Longitude	
	В.	Advanced Boolean Equation	
	D.	Language	
	C.	Advances Binary Equal	
	0.	Language	
	D.	Advanced Boolean Expression	
		Language	
	A	Ans: D. Advanced Boolean	
		Expression Language	
4.	The	ABEL notation equivalent to	
		lean expression A+B is	
	A.	A & B	
	B.	A!B	
	C.	A#B	
		None of the above	
	A	Ans: C. A # B	

gar'sTestmaster	100000000000000000000000000000000000000
The OR gate performs which of the	289
Tollowing function	15. A major benefit of direct mapping of a cache is its simplicity.
A. Boolean multiplication	a cache is its simply a cache is its simply a
B. Boolean subtraction	a cache is its simplicity. The main
C. Boolean division D. Boolean addition	disadvantage of this organization is
> Ans: D. Boolean addition	
	A. It does not allow concurrent access to the intended data and its tag
The Boolean expression AB'CD'is	its tag
A. a sum term	B. It is more expensive than other types of cache growth and the state of the state
B. A product term	types of eache group
C. a literal term	The cache hit ratio
D. a binomial term	
> Ans: B. a product term	man onto the
	block frame in the cache  D. Its access time the cache
The Boolean expression $X = AB +$	D. Its access time is greater than that of other cache
CD represents	Organizations
A. two ORs AND ed together	Ans: C. The cache his
B. A 4-input AND gate	
C. two ANDs OR ed together	olocks used alternately
D. None of the above	the same block from .
> Ans: C. two ANDs OR ed	the cache
together	16 A human
ABEL is a short form for	16. A hypothetical microprocessor
	communicates with its many
A. Advanced Broadband Enabled	peripheral over an X-bit data L
Longitude	a 10-bit address bus. It contains
B. Advanced Boolean Equation	8-bit accumulator A and two 16-bit
Language	registers: program court to bit
C. Advances Binary Equal	registers: program counter PC and
	index register X theopcode of each
Language	instruction is one byte (8 bits) long.
D. Advanced Boolean Expression	Suppose that any internal processor
Language	time is negligible, and that the time
> Ans: D. Advanced Boolean	to address memory and transfer one
Expression Language	byte in either di
	byte in either direction over the data
The ABEL notation equivalent to	instruction is one byte (8 bits) long. Suppose that any internal processor time is negligible, and that the time to address memory and transfer one byte in either direction over the data bus equals unity (one memory cycle).  The time taken to fetch as the second content of the content of th
Boolean expression A+B is	cycle).
	The time taken to fetch and execute
	the 3-byte instruction "store A in
B. A!B	some address indexed by Am
C. A#B	some address indexed by X" is A. 3
D. None of the above	D. 4
Ans: C. A # B	
Alls. C. A # B	> Ans: B. 4



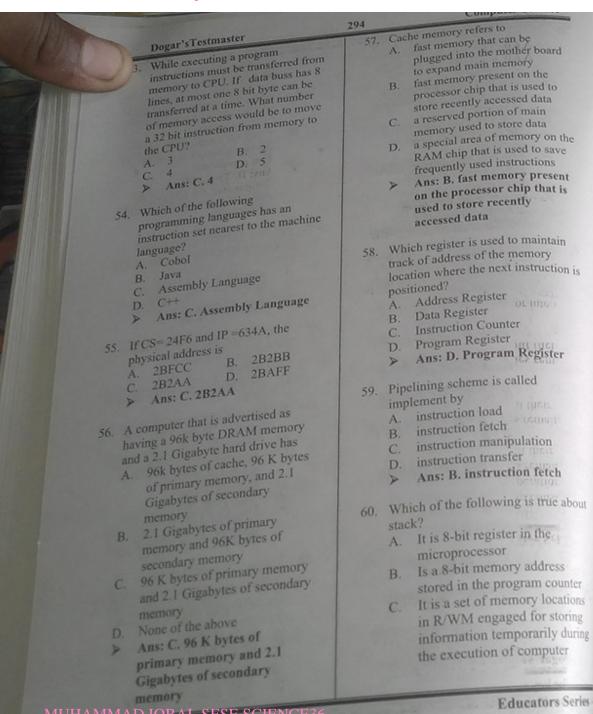
WASTER
Dogar stestmaster
26. An S-R latch can be implementing by means of A. AND, NOR B. NAND, NOR C. AND, XOR D. NOT, XOR Ans: B. NAND, NOR  27. Which of the following statement is true about Karnaugh map A. A Karnaugh map is totally different from a truth table because it presents even values while truth table presents all the possible values. B. A Karnaugh map is aim;
all the possible values of input values and the resulting output of each value.  C. A Karnaugh map is similar to a truth table because it presents all the possible values of input variables and the resulting output of each value.
<ul> <li>D. A Kamaugh map is similar to a truth table because it presents all the possible input variables and the resulting output of all value.</li> <li>Ans: C. A Karnaugh map is similar to a truth table because it presents all the</li> </ul>
possible values of input variables and the resulting output of each value.
<ul> <li>28. In a 4-variable K-map, a 2-variable product term is produced by</li> <li>A. a 2-cell group of 1s</li> <li>B. a 8-cell group of 1s</li> <li>C. a 4-cell group of 0s</li> <li>▶ Ans: C. a 4-cell group of 1s</li> </ul>
The same of the sa

	Alek -	12 1
B. C. D.	8 cells for min or max terms 12 cells for min or max terms 16 cells for min or max terms Ans: B. 8 cells for min or max terms terms	202
BCD	On a Karnaugh map, grouping the Os  a POS expression a SOP expression a "don't care" condition AND-OR logic Ans: A. a POS expression	25.
A E C I	A. 16 cells B. 32 cells C. 64 cells D. None of the above Ans: B. 32	6
I	A particular Full Adder has A. 3 inputs and 2 output B. 3 inputs and 3 output C. 2 inputs and 3 output D. 2 inputs and 2 output  Ans: A. 3 inputs and 2 output  Half Add.	26
	Half-Adder Logic circuit contains  A. 2 XOR Gates. B. 3 XOR Gates. C. 1 XOR Gates. D. 6 XOR Gates.  Ans: C. 1 XOR Gates.	
34.	With multiplexer as parallel to serial converter requires  A. A parallel to serial converter circuit connected to the multiplexer  B. A counter circuit connected by	الوں میں ایمرجنسی نافذ بھیا م
	the multiplexer C. A BCD to decimal decoder connected to the multiplexer D. A 2-to-8 bit decoder connected to the multiplexer	ل مارت مندان البرار من الا
	Ans: A. A parallel to serial converter circuit connected to the multiplexer	يزدار د کاروان

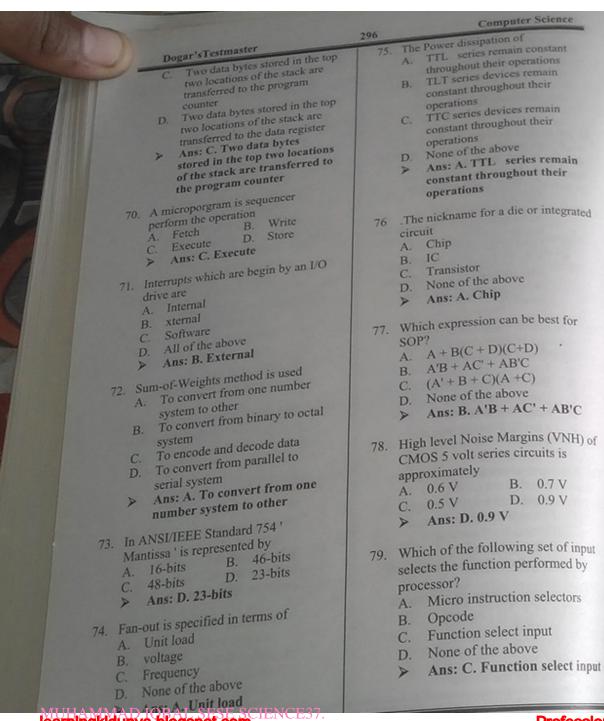
1 Tolessional Academy
an emaster
5. The values that go above the specified range cannot be correctly represented and are measured as  A. Buffer B. overwhelm C. Overflow D. Sign value Ans: C. Overflow
36. Which of the following encoder is used as a keypad encoder?
A. 1-10-4 incoder
B. 4-to-10 cimal C. BCD-to-Decimal D. Decimal-to-BCD Priority D. Decimal-to-Decimal
Ans: C. BCD-10
37. Demultiplexer can also be used as A. Deselector B. decoder C. Distributor D. Encoder Ans: C. Distributor
a coment decoder has
A. 3 inputs and 7 outputs
B. 2 inputs and 7 outputs
C. 4 inputs and 4 outputs D. 7 inputs and 4 outputs Ans: C. 4 inputs and 7
> Ans: C. 4 inputs
39. For a 3-to-8 decoder how many 2-to-4 decoders will be required?
4 decoders will be 154 B. 3
C 5 D. 2
> Ans: D. 2
40. If '1110' is applied at the input of BCD-to-Decimal decoder which output pin will be make active?  A. 2 <sup>nd</sup>
B. 4th
D. None of the above
> Ans: B. 4
41. 8-bit parallel data can be converted
into serial data by date
A. 4-to-2 multiplexer
learningkidunya.biogspot.com

		PPSC, NIS
	C. D.	8-to-1 multiplexer 8-to-4 multiplexer Ans: C. 8-to-1 multiplexer
	74X A. B. C. D. ➤	2-input, 4-bit multiplexers (157 can be connected to apply 4-input, 8-bit a multiplexer, 4-input, 16-bit a multiplexer, 2-input, 4-bit a multiplexer, 2-input, 8-bit a multiplexer, Ans: D. 2-input, 8-bit a multiplexer.
	Usin seria A.	ng multiplexer as parallel to al converter requires A parallel to serial converter circuit connected to the multiplexer
	B.	A counter circuit connected to
	C.	A parallel to serial converter circuit connected to the multiplexer
	D.	None of the above
	>	Ans: C. A parallel to serial converter circuit connected to the multiplexer
	A de A. B. C.	Several input and one output One input and one output Several inputs and several outputs One input and several outputs Ans: D. One input and several outputs
1	Dem A. B. C.	Single input and many outputs. Single input and single output, Many inputs and multiple outputs. None of the above Ans: A. Single input and
		many outputs.

SIMASIER	Tour Study Partition
Dogar s l'estmaster	160
<ul> <li>6. The key use of the Multiplexer is to A. Pick data from multiple sources and to transfer it to a multiple destination</li> <li>B. Pick data from single source and to transfer it to a multiple destinations</li> <li>C. Pick data from single source and to transfer to single destination</li> <li>D. Pick data from multiple sources and to transfer to single destination</li> <li>Ans: D. Pick data from multiple sources and to transfer to single destination</li> <li>The binary numbers A = 1100</li> </ul>	B. Two 4-bit comparator circuits can be connected to form multiple 8-bit comparator Two 4-bit comparator C. Two 4-bit comparator C. Two 2-bit comparator D. Two 2-bit comparator circuits can be connected to form single 4-bit comparator Ans: D. Two 2-bit comparator circuits can be connected to form single 4-bit comparator  50. When the control line in tri-state buffer is high the buffer work similar to a
= 1001 are useful to the inputs of a comparator. Chose the correct option about the output levels?  A. A > B = 1, A < B = 0, A < B = 1  B. A > B = 0, A < B = 1, A = B > 0  C. A > B = 1, A < B = 0, A = B = 0  D. A > B = 0, A < B = 1, A = B < 1  Ans: C. A > B = 1, A < B = 0, A = B = 0	A. AND gate B. OR gate C. NOT gate D. XOR gate Ans: C. NOT gate  51. A memory management method used to get better computer performance is A. To pick memory chips based on price B. To store up as much data as possible on disk C. By means of the gaster.
Which gate is best used as a basic comparator?  A. NOR  B. OR  C. Exclusive-OR  D. AND  ➤ Ans: C. Exclusive-OR  Which of the following option is	data that will most likely be desired soon  D. None of the above Ans: C. By means of the cache to store data that will most likely be desired soon  52. The instruction MOV CL, [BX][DI]+8 represents the which of the subsequent addressing mode?
A. Two 4-bit comparator circuits can be connected to form multiple 6-bit comparators.	A. Based relative B. Based indexed C. Base direct D. Register indirect  Ans: B. Based indexed

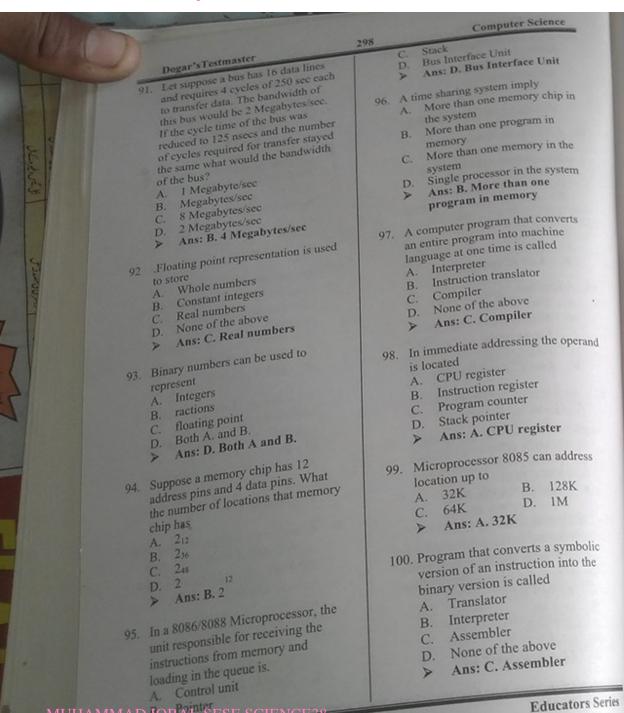


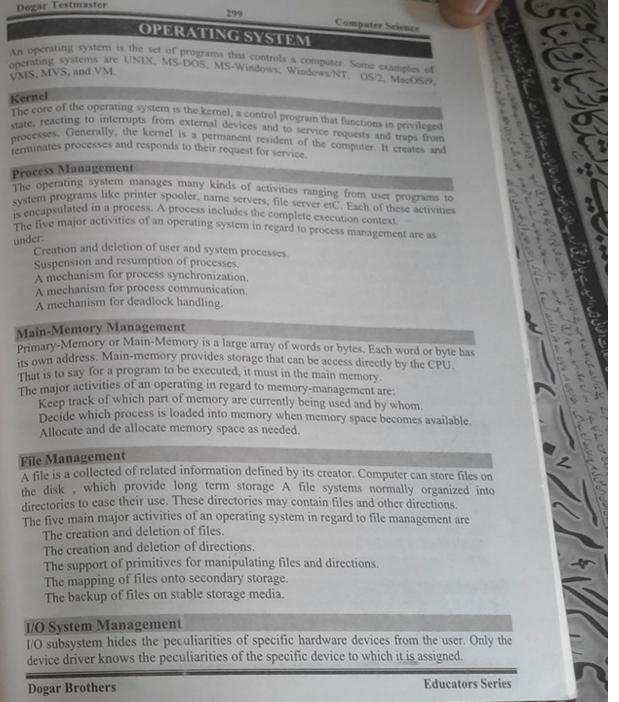
-	D.	It is a 16-bit	295
	N SA	It is a 16-bit memory address stored in the program counter Ans: C. It is a set of memory locations in R/WM engaged for storing information temporarily during the execution of computer	65. While calling address of the A. Stack po B. Stack C. Instruct
61.	A s A. B. C. D.	tack pointer is  A register that contains address of next instruction.  A register that decodes and executes 16-bit arithmetic expression. 16-bit register in the microprocessor that indicate the beginning of the stack memory None of the above Ans: C. 16-bit register in the microprocessor that indicate the beginning of the stack memory	D. Instruct  Ans: B  66. A micro-pro 0's and 1's is  A. Binary  B. Binary  C. Symbol  D. Sybol  Ans: micro  67. Memory a is limited  A. CAL
52.	deci con A. B.	branch logic that supply sion making capacity in the trol unit is identified by Unconditional branch Unconditional transfer Conditional branch None of above Ans: B. Unconditional transfer	B. PUS C. STA D. STC Ans 68. How ma to addre a 2048; A. 10
3.	A. B.	rupts which are commence by astruction are called Instruction level interrupts External interrupts Process level interrupts Software interrupts Ans: D. Software interrupts	B. 11 C. 8 D. 12 A 69. Which true w end of
	A. B. C.	general addressing scheme in by a CP J is Internal External Indirect None of the above Ans: C. Indirect	A, 7

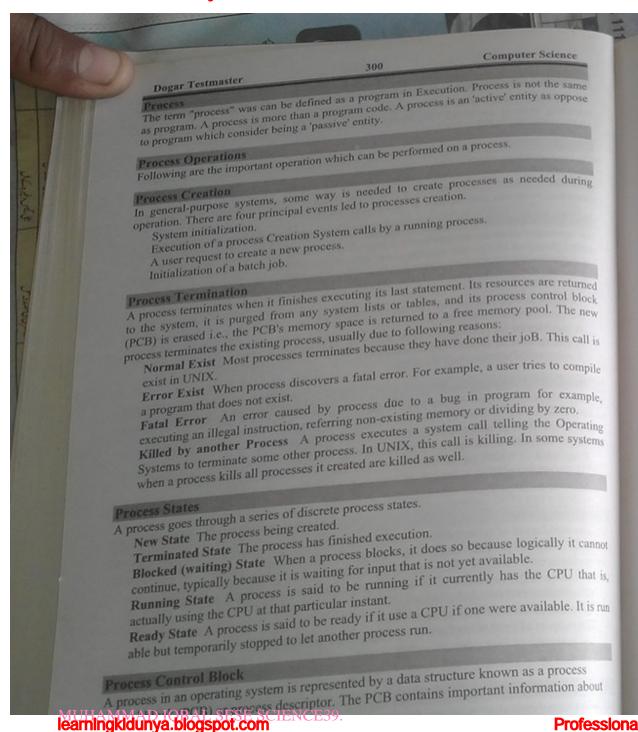


0.0	Dogar's Testmaster
80.	GAL can be reprogrammed because
	A. Transistor logic
	B. TTL logic
	C. E^2 CMOS logic
	D. IC logic  Ans: C. F^2 CMOS.
	2 CMOS logic
81.	GAL is a short form of
	A. General access Logic
	B. General Arithmetic Logic
	C. Giant Array Logic D. None of the above
	> Ans: C. Giant Array Logic
82	.The GAL22V10 contains
	A. 30 input B. 25 input
	C. 20 input D. 10 input
	> Ans: D. 10 input
83.	A latch has
	A. 5 stable states
	B. 4 stable states
	C. 2 stable states
	D. 3 stable states
	> Ans: C. 2 stable states
	ransi Ci 2 stable states
84	.An S-R latch can be put into
	practice by the use of
	A. AND, XNOR
	B. NAND, OR
	C. NAND, NOR
	D. AND, XOR
	D. AND, AUR
	> Ans: C. NAND, NOR
85.	Let suppose an active-HIGH S-R
	latch has a 0 on the S input and a 1
	on the B input and all
	on the R input and then the R input
	set off to 0, the latch output will be
	A. RESET B1
	B. SET B1
	C. SET to 0
	D. Invalid
	Ans: A. RESET B1

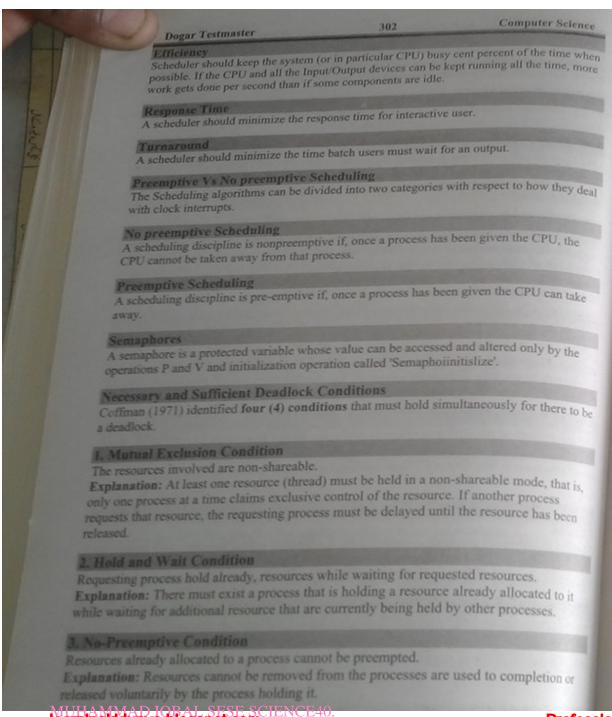
100000	1	1
ed because	Con	
occause	86. Which of the following language is	
	designed for embedded computer system?	
	system?	市工艺
	A. Ada B. Issue	日本は日
S logic	COBOL D	1200
	Ans: A. Ada	
ie		2074
Logic	87. Let suppose computer's memory is composed of 8K words.	
Logic	composed of 8K words of 32 bits	
	each. How many bits are required	and the last of th
ay Logic	for memory address? A. 10	25
	C 16 B. 13	
ns 263		
25 input	> Ans: B. 13	200
10 input	88. Assuma	
	88. Assume a computer's memory is	
	composed of 4K words of 32 bits	
	Carculate the total bia.	
MALE INC.	- Adoly:	
	A. 131200 B. 128700	100
	C. 1310/2 D 1222	
	Ans: C. 131072	0
tates		1000
it into	89. A computer's memory is composed of 8K words of 32 kg.	
it into		
	Calculate the bytes which are stored	0/0
	in memory.	- 100
	Λ 221	65
	R. 32K B. 320K	5
	C. 24K D. 48K	52
OR	Ans: A. 32K	15
		ر می مادند احلامی ۱۵۰ کار ا
HIGH S-R	90. A computer's memory is composed	18
iput and a 1	of 8K words of 32 bits each. How	1.
the Dina	many bits will be need to the each. How	C
the R input	many bits will be necessary for the	1
itput will be	memory address?	
	A. 20	
	B. 14	B
	C. 15	30
		7
D1	ayour of the above	197
B1	Ans: C. 15	

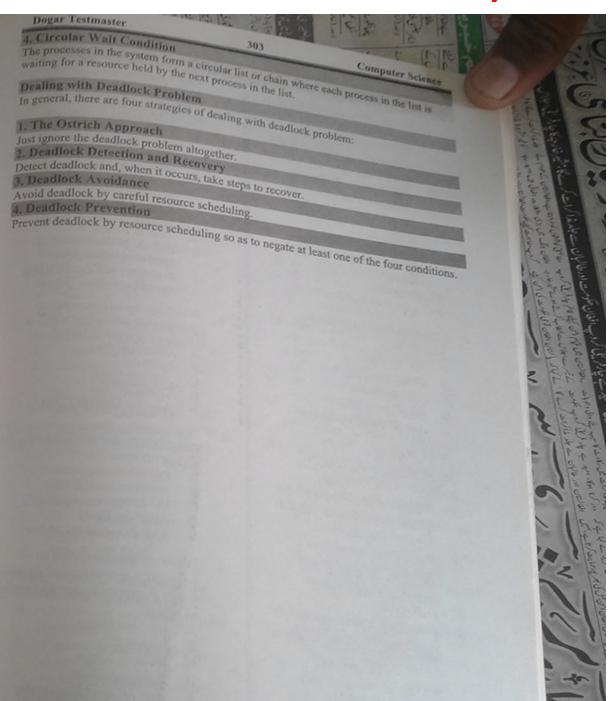


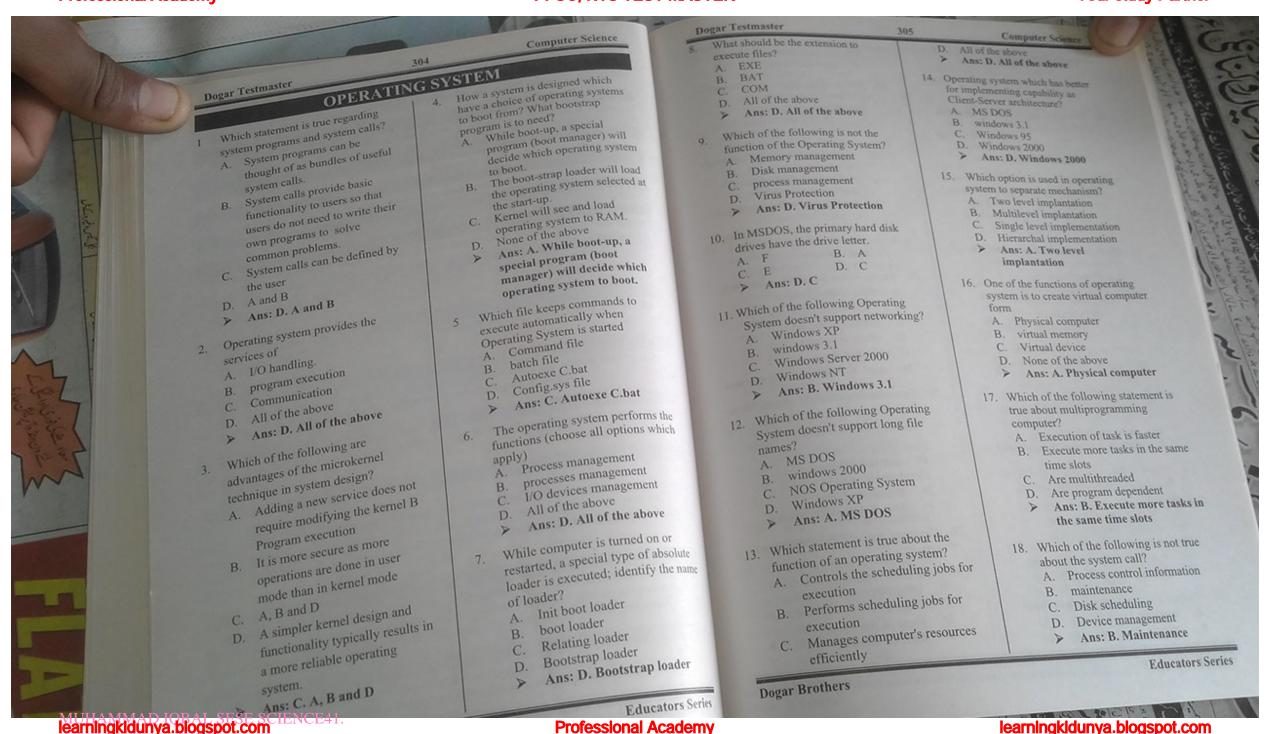




Dogar Testmaster A thread is a single sequence stream within in a process. Because threads have some of the Threads A thread is a sing processes, they are sometimes called lightweight processes. In a process, allow multiple executions of streams. As we mentioned earlier that in many respect threads operate in the same way as that of User-Level Threads User-Level threads implement in user-level libraries, rather than via systems calls, so thread switching does not need to call operating system and to cause interrupt to the kernel. In fact, the kernel knows nothing about user-level threads and manages them as if they were single-Kernel-Level Threads In this method, the kernel knows about and manages the threads. No runtime system is In this method, the first and table in each process, the kernel has a thread table that keeps track of all threads in the system. In addition, the kernel has a thread table that process table to keep track of processes. Operating Systems kernel provides system call to Context Switching Threads are very inexpensive to create and destroy, and they are inexpensive to represent. For example, they require space to store, the PC, the SP, and the general-purpose registers, but they do not require space to share memory information, Information about open files of but they do not use, etC. With so little context, it is much faster to switch between threads. In other words, it is relatively easier for a context switch using threads. CPU/Process Scheduling The assignment of physical processors to processes allows processors to accomplish work. The problem of determining when processors should be assigned and to which processes is called processor scheduling or CPU scheduling. Goals of Scheduling Fairness Fairness is important under all circumstances. A scheduler makes sure that each process gets its fair share of the CPU and no process can suffer indefinite postponement. Note that giving equivalent or equal time is not fair. Think of safety control and payroll at a nuclear plant. Policy Enforcement The scheduler has to make sure that system's policy is enforced. For example, if the local policy is safety then the safe y control processes must be able to run whenever they want to. even if it means delay in payroll processes.

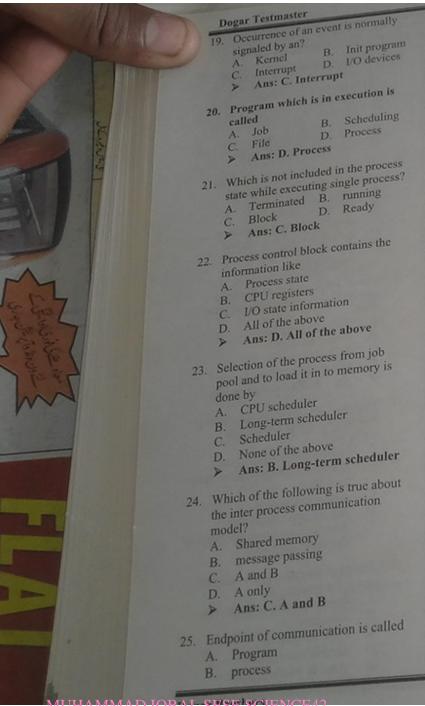






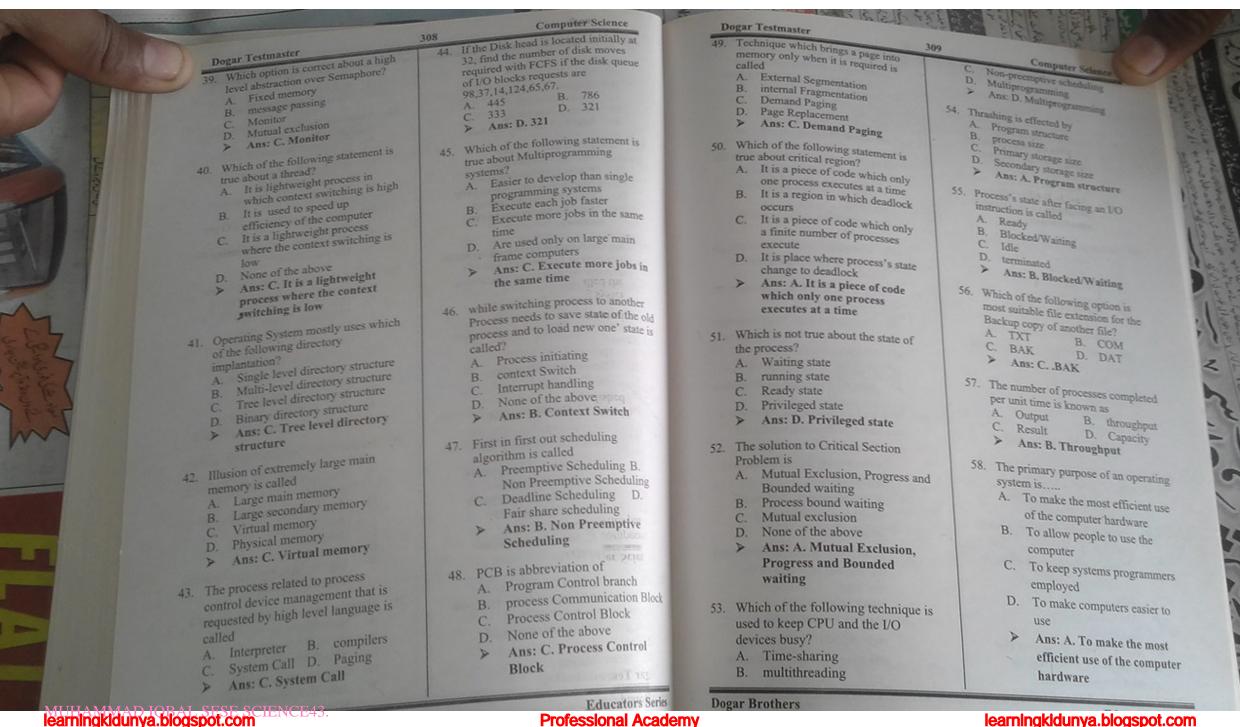
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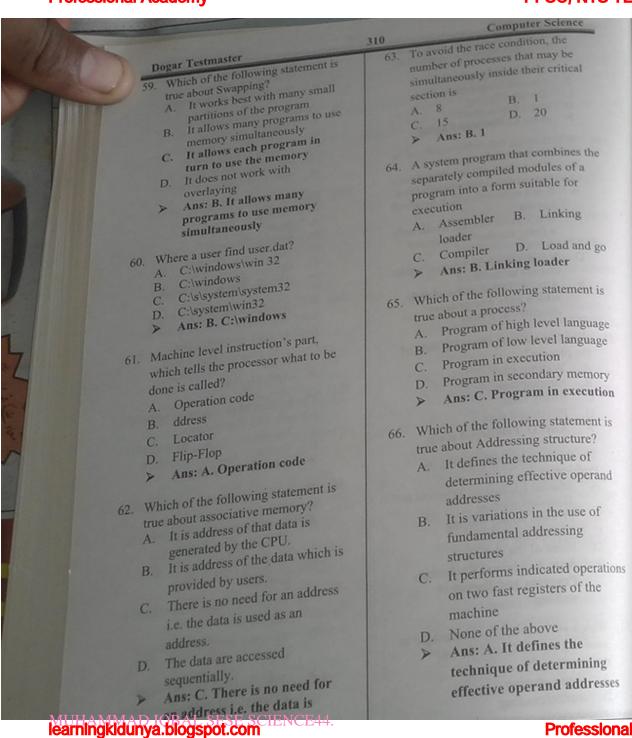
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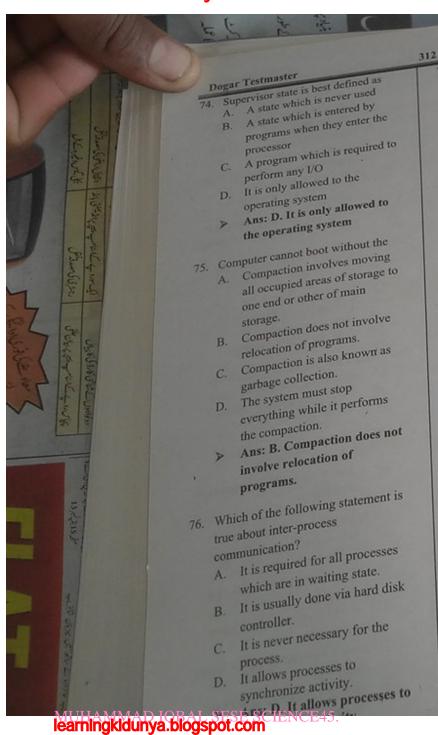
	PPSC, NTS TEST MA
	C. Socket D. Block process
	> Ans: C. Socket
-	Which of the following statement is
26.	rene about non-present
	scheduling:
	A. A process state to the waiting
	B. A process switching from ready
	A process switching from
	waiting to ready state
	D. A process switching from new to ready state
	Anc. A. A process switching
	from running state to the
	waiting state
	Round-Robin scheduling algorithm
27.	technique is designed for
	A. Time-sharing systems
	B. parallel processing
	C. Client computer
	D. None of these
	> Ans: A. Time-sharing systems
	Time which is taken by dispatcher to
28.	stop a process and start another
	running process is called?
	D. Lovi
	A. Delay B. dispatch latency
	the state of
	a and time
	D Dienetch letenen
	> Ans: B. Dispatch latency
29.	The basic unit of CPU utilization is
	called?
	A. Process
	11.
	4 1
	C Throad
	Ans: C. Infeau
and the same of	P. Locations Codes
	Educators Series

20	Round robin schools	307
30.	Round robin scheduling is the preemptive version of?	
	A. Shortest job first	C. Dynamic linking D. Static Late
	B. shortest remaining	
	C. First in First out	Ans: C. Dynamic link
	D. Priority scheduling	35. Which as a
	> Ans: C. First in First out	THE OF THE PARTY
		true about block state  A. Processes at
31.	A page fault occurs when	A. Processes that are rum
-	A. Page is in the memory	B. Process
	B. Process is in the half at-	
	C. Process is in the waiting at-	C. Processes which is re
	D. Page is not in the memory.	found which is re
	> Ans: D. Page is not in the	D. Processes waiting fo
	memory	
		Ans: D. Processes
32.	Suppose A and B be two semaphores	I/O are found
-	initialized to 1, where P() and D1	36 777
	processes the following statements	36. Which statement is true
	waitA.;waitB.;;	- Tractom
	signalA.;signalB. and waitA.;	and storage and -
	waitB.;;signalA.;signalB.;	- Hames is one
	respectively. The above situation is	Do contains debe
	about studion is	unnecessary feature
	A. Halt state	DS has no impos
	B. Interrupt service routine	millions of files a
	C. Deadlock state	uatabase
		D. None of the above
		Ans: A. FDS sto
	> Ans: C. Deadlock state	retrieval of file
33.	Which statement is correct about a	37. Banker's algorithm is
	shell?	which of the situation
	A. Shell is hardware component	A. Deadlock detec
	B. Shell is part in assembler	systems
	C. Shell is command interpreter	B. Deadlock preve
	D. Shell is used in memory	one-si
	management	operating syste
		C. Deadlocked re
	> Ans: C. Shell is command	D. All of above
	interpreter	Ans: B. Dead
2000	- 1 1	in operating
34.	Routines are kept on disk in a re-	
	locatable load format. Main program	38. Memory from 1K
	is loaded into memory & is	A. Main Memor
	executed. This is which type of	Tricinol
	loading?	Parjoreat Mich
		C. Virtual Mem
	A. Static loading	D. Conventiona
	B. dynamic loading	Ans: D. Cor
		, and, D. Col
	10000	Memory
Dog	ar Brothers	



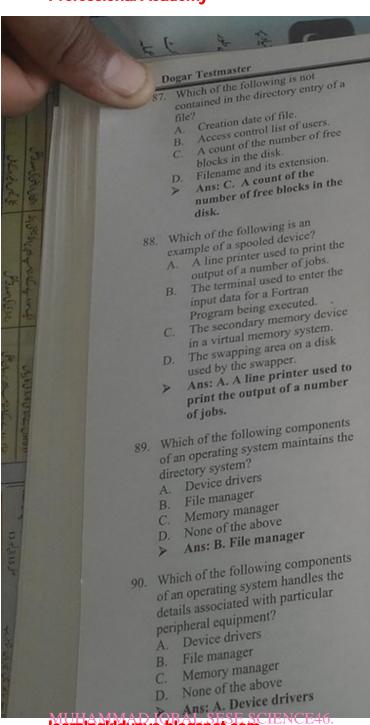


Do	gar Testmaster	四十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二
67.	Which of the following is true about (MBR)?  A. It is a hardware memory device that shows location of the current instruction being executed.  B. It is a group of IC's that fetched the instructions from memory.  C. It contains the address of the memory location that is to be read from or stored into.  D. It contains a copy of the designated memory location specified by the MAR after a "read" or the new contents of the memory prior to a "write".  Ans: D. It contains a copy of the designated memory location specified by the MAR after a "read" or the new contents of the designated memory prior to a "write".  The method of allowing processes that are logically runnable but temporarily suspended is called A. Preemptive scheduling	Computer Science  D. Least recently used algorithm is used to  A pages out pages that have been used recently  B. pages out pages that have been been used recently  C. pages out pages that have been least used recently  D. pages out the first page in a given area  Ans: C. pages out pages that have been least used recently  71. Software that merges the records from two files into one is called?  A. System software  B. utility program  C. Networking software  D. Application system  Ans: B. Utility program  72. Which statement is true about fork?  A. It is the dispatching of a task  B. It is the creation of a new job  C. It is the creation of a new job
	<ul> <li>B. Non preemptive scheduling</li> <li>C. Shortest job first</li> <li>D. First come first served</li> <li>Ans: A. Preemptive scheduling</li> <li>Which of the following statement is</li> </ul>	C. It is the creation of a new process D. It increases the priority of a task  Ans: C. It is the creation of a new process
69.	true about Storage-to-Storage instructions?  A. It has operands in the main store.  B. It performs an operation on a register operand and an operand.	73. Thrashing is best explained as  A. It is a consequence of virtual memory systems  B. It can always be controlled by swapping  C. It will always occurs on super
	<ul> <li>C. It performs indicated operations on two fast registers of the machine.</li> <li>D. None of the above</li> <li>➤ Ans: A. It has operands in the main store.</li> </ul>	D. It can be caused by poor paging algorithms



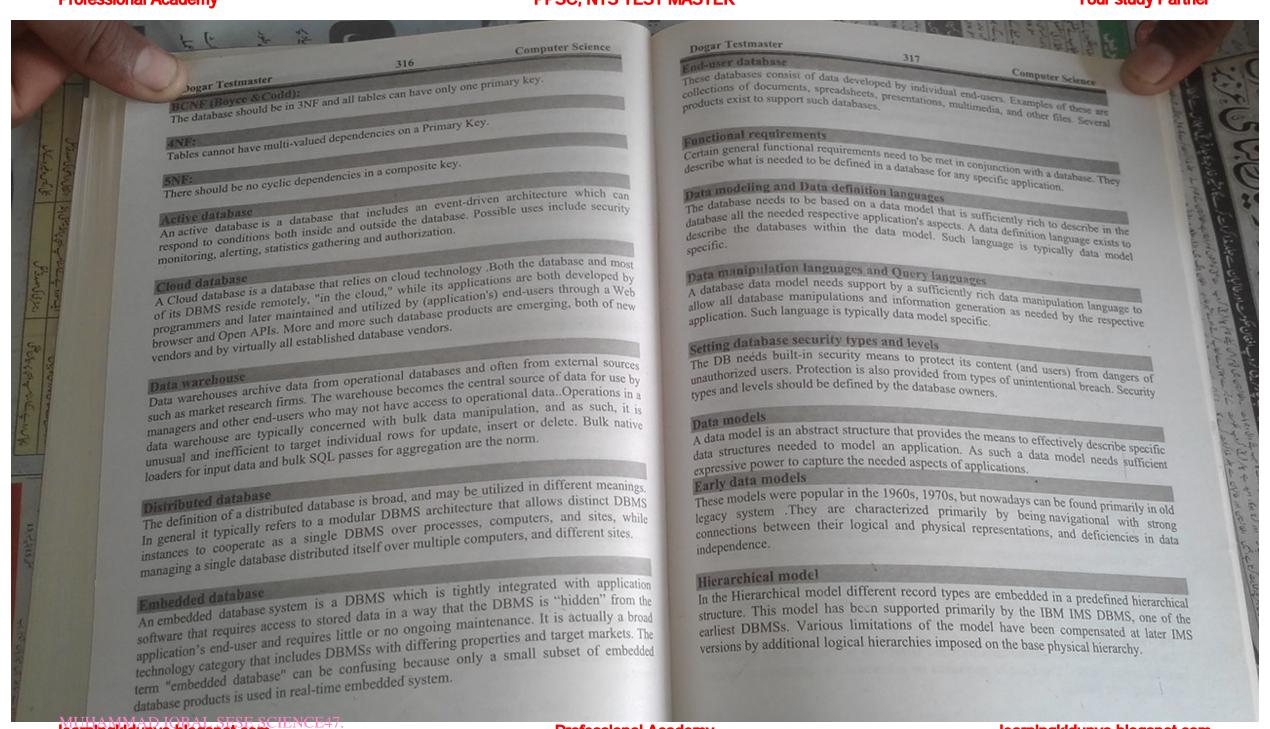
PPSC, NTS TEST MAS
Computer Science
Gometions is
77. Which of the following functions is
77. Which of the following performed by the loader?  performed by the loader?
A. Allocate space in inches  the programs and resolve the programs are references between symbolic references between
eymbolic reve
object decks.  B. It adjust all address dependent
_ te adjust an
locations.  It physically place the machine  It physically place the machine
It physically place the machine
C. It physically place the instructions and data into
D. All of the above.
t -et D. All of
> Ans. D.
Which of the following statement is
78. Which or memory?
78. Which of the true about memory? true about memory? A. It is a device that performs a
A. It is a device an erations.
ance of operations
- the device where
a sation is stored
anence of instructions
C. it is a sequence of a sequence of the control of
D. It is typically interactive processing and time-
interaction of the
slicing of the
Ans: B. It is the device where
formation is stored CPU's
time to allow quick response
time to allow quies sopous
to each user.
79 Which of the following rules out the
79. Which of the following
use of GO TO!
Classichall
DED DIAGRAMS
B. Nassi-Shneiderman diagram
C. Nassi-Silielderman dag
Name of the above
C Nassi-Shheiderman
diagram
that gots up an
80. A system program that sets up an
-table program in man
executable problem is
ready for execution is
accembler B.
D. compiler.
> Ans: C. loader
, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,

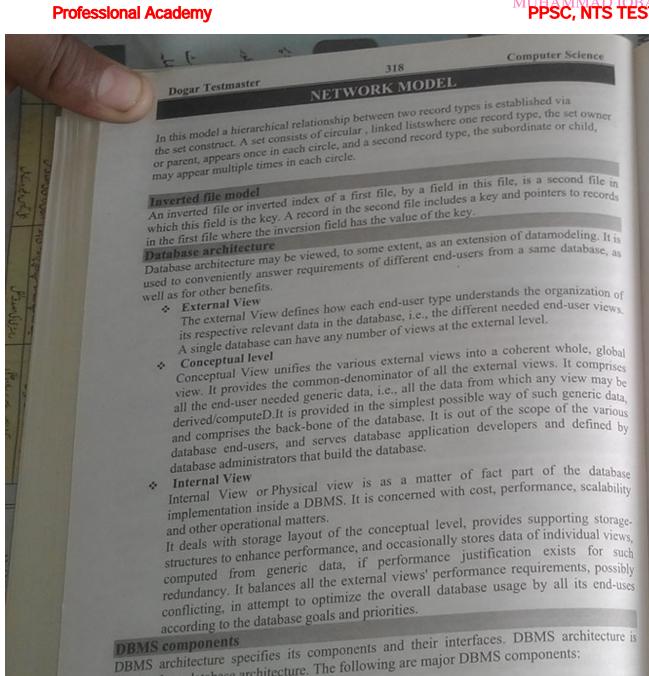
Dogar Testmaster	
81. Difference between a multiproces	Community of the second
system and a multiprocessor system is that in a multiprocessor system:  A. Main storage is shared by many programs.  B. Input is accepted in batches of many jobs.  C. Processor time is shared among several processes.  D. Many processors may be active simultaneously.  Ans: D. Many processors may be active simultaneously.  Ans: D. Many processors may be active simultaneously.  82. A user process can be blocked only if it is  A. In the ready state  B. In the running state.  C. In the blocked/waiting state.  D. Waiting for a resource.  Ans: A. In the ready state  83. A wait operation on a semaphore should not occur within a critical section controlled by that semaphore because  A. A deadlock will occur.  B. A semaphore is not a shared variable.  C. Another process may then enter the critical section violating the mutual exclusion constraint.  D. A signal on a semaphore is always given from outside the critical section.  Ans: A. A deadlock will occur.  Ans: A. A deadlock will occur.	B. Users can exploit a manhaeved feedback scheduling policy by breaking a long job unto several small jobs.  C. The processor scheduler normally classifies a process as being a CPU-bound process if it uses most of the previous time slice allocated to it.  D. The round-robin-scheduling policy allocates a time slice to a process depending on the number of time slices it has already used.  Ans: D. The round-robin-scheduling policy allocates a time slice to a process depending on the number of time slices it has already used.  85. It is advantageous for the page size to be large because:  A. Less unreferenced data will be loaded into memory.  B. Virtual addresses will be smaller.  C. Page tables will be smaller.  D. Large programs can be run.  Ans: C. Page tables will be smaller.  86. Which of the following statement is true about Disk scheduling?  A. Allocates disk space to users in a fair manner.  B. Validates the file control information which is stored in the file.  C. Examined pending disk requests to determine the most efficient way to service the requests.
84. Which of the following statements is false?  A. I/O-bound processes should be given priority in scheduling over CPU-bound processes to ensure good turnaround time:	D. Reorganizing disk requests to maximize seek time  Ans: C. Examined pending disk requests to determine the most efficient way to service



	PPSC, NTS I
	Computer Science
4	Which of the following components  Which of the following system is not part of
91.	Which of the following components of an operating system is not part of
	f an operation
	he kernel?
	rate manager
	or of the dos
	Anc. A. Shen
	. computer with
	A. Bootstrapping
	C. Multiprogramming  None of the above  Multiprogramming
	Ans: C. Multiple
	con operating system is
93.	Execution of an operating state of the initiated by a program called the initiated by manager
	A Window manager
	A. Window Harr
	B. Scheduler
	C. Bootstrap D. None of the above
	D. None of the abstrap
	> Ans: C. Bootstap
	The end of a time slice is indicted by
94.	The end of a time saled the occurrence of a signal called
	An intellupt
	B. A semaphore
	B. A schiap
	C. A login D. None of the above
	D. None of the above
	D. Ans: A. An interrupt
	A section of a program that should
95.	A section of a process
	A section of a program be executed by at most one process
	at a time is called a
	A Litility
	Critical region
	Deivileged instruction
	Name of the above
	Ans: B. Critical region
	> Ans: B. Critical
	Which of the following is not
96	which of the following involved in a context switch?
100	involved in a context strict.
	A Interrupt
	n acc table
	- t taker
	C. Dispatcher
15	D. Shell
	, D Shell
	> Ans: D. Shen

Dogar Testmaster Computer Sci DATABASE A database is a collection of data organized in a particular way. Databases can be of many types such as Flat File Databases, Relational Databases, and Distributed Databases can be of my A database is a collection of data. That may sound overly simplistic but it pretty much sums ap what any database is. A database could be as simple as a text file with a list of names. Or it could be as complex as a large, relational database management system, complete with in-What a DBMS? MySQL and mSQL are database management systems or DBMS. These software packages MySQL and the manipulate a database. All DBMSs use their own implementation of SQL Is may be a subset of a superset of the instructions provided by SQL 92. MySQL, due to its What's a RDBMS? A relational database uses the concept of linked two-dimensional tables which comprise of rows and columns. A user can draw relationships between multiple tables and present the output as a table again. A user of a relational database need not understand the output as output What's Database Normalization? Normalization is the process where a database is designed in a way that removes redundancies, and increases the clarity in organizing data in a database. Normalization of a database helps in modifying the design at later times and helps in being Normalization raises in terms of management, data storage and later times and nelps in being of the data base in terms of management, data storage and scalability. of the data database is achieved by following a set of rules called 'forms' in creating the database. These rules are 5 in number (with one extra one stuck in-between 3&4) and they are: 1st Normal Form or 1NF: Each Column Type is Unique. 2nd Normal Form or 2NF; The entity under consideration should already be in the 1NF and all attributes within the entity should depend solely on the entity's unique identifier. 3rd Normal Form or 3NF: The entity should already be in the 2NF and no column entry should be dependent on any other entry (value) other than the key for the table. If such an entity exists, move it outside into a new table. Now if these 3NF are achieved, the database is considered normalized. But there are three more 'extended' NF for the elitist. These are:



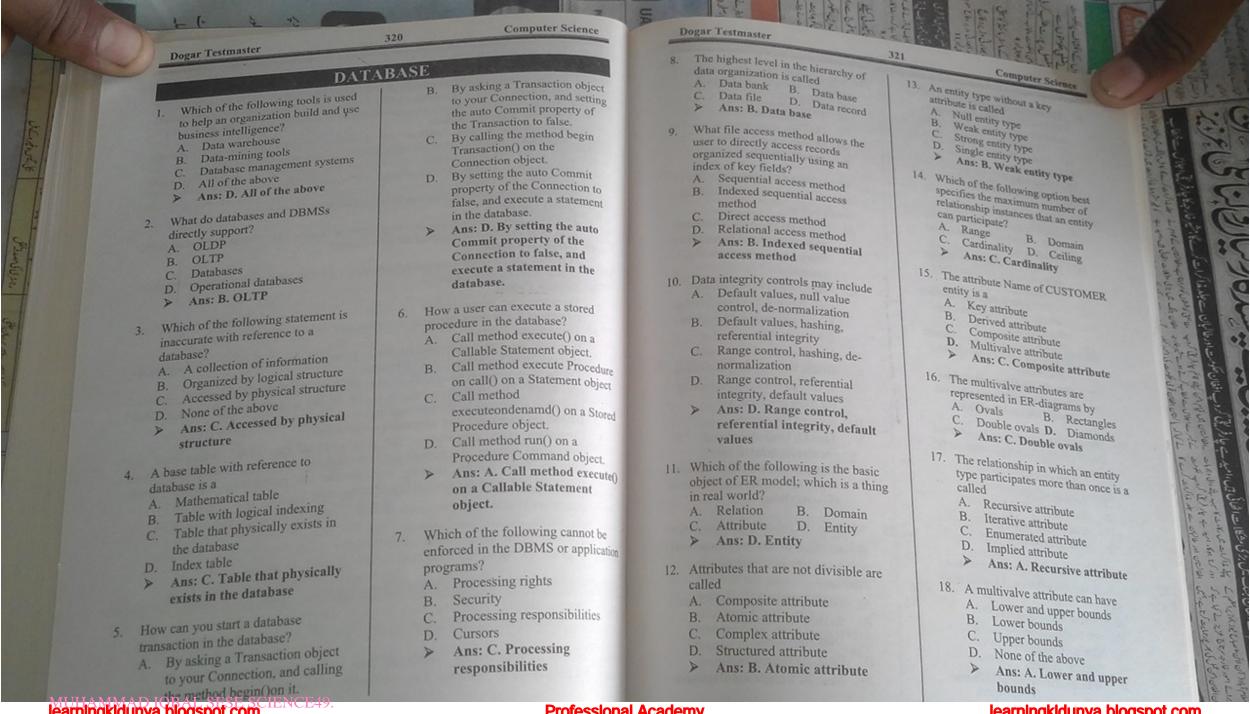


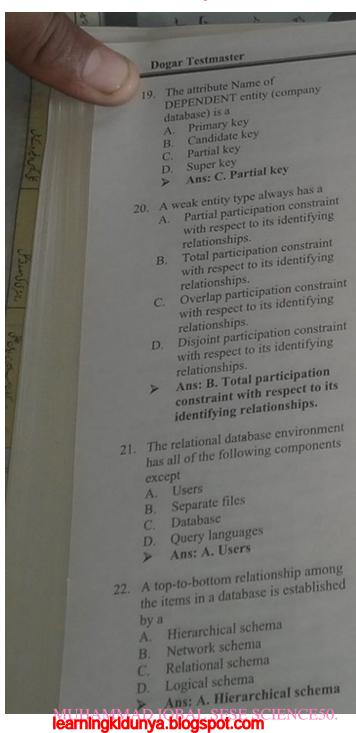
distinct from database architecture. The following are major DBMS components:

They are the means to communicate with the DBMS to perform all the operations

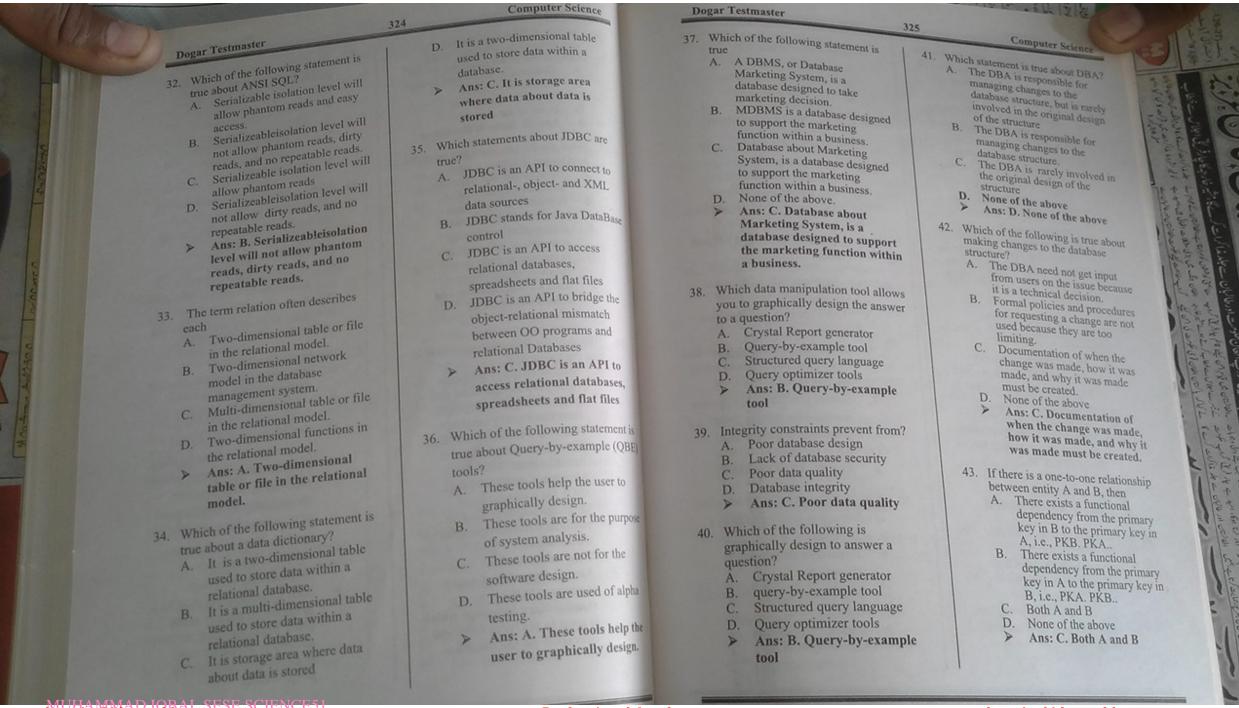
Dogar Testmaster nirect database operations Defining data types, assigning security levels, updating data, querying the database, etc. Operations related to DBMS operation and management Operations related to the property of the prop Backup and restore, security monitoring, database storage allocated database language engines performance monitoring and turing, etc. Most operations upon databases are performed through expression in Database Most operation of the performed through expression in Database languages. Languages exist for data definition, data manipulation and queries , as well as for specifying various aspects of security, and more. Language expressions are fed into a DBMS through proper interfaces. A language expressions are fed into a DBMS through proper interfaces. A language engine processes the language expressions to extract the intended database operations from the . Ouery Optimizer Performs query optimization on every query to choose for it the most efficient query Database Engine Performs the received database operations on the database objects, typically at their · Storage Engine Translates the operations to low-level operations on the storage bits. In some references the Storage engine is viewed as part of the Database engine. . Transaction Engine It is used for correctness and reliability purposes most DBMS internal operations Transactions can also be specified externally to the DBMS to encapsulate a group of operations. The transaction engine tracks all the transactions and manages their . DBMS management and operation component Comprises many components that deal with all the DBMS management and operational aspects like performance monitoring and tuning, backup and restore, recovery from failure, security management and monitoring, database storage allocation and database storage layout monitoring. 000

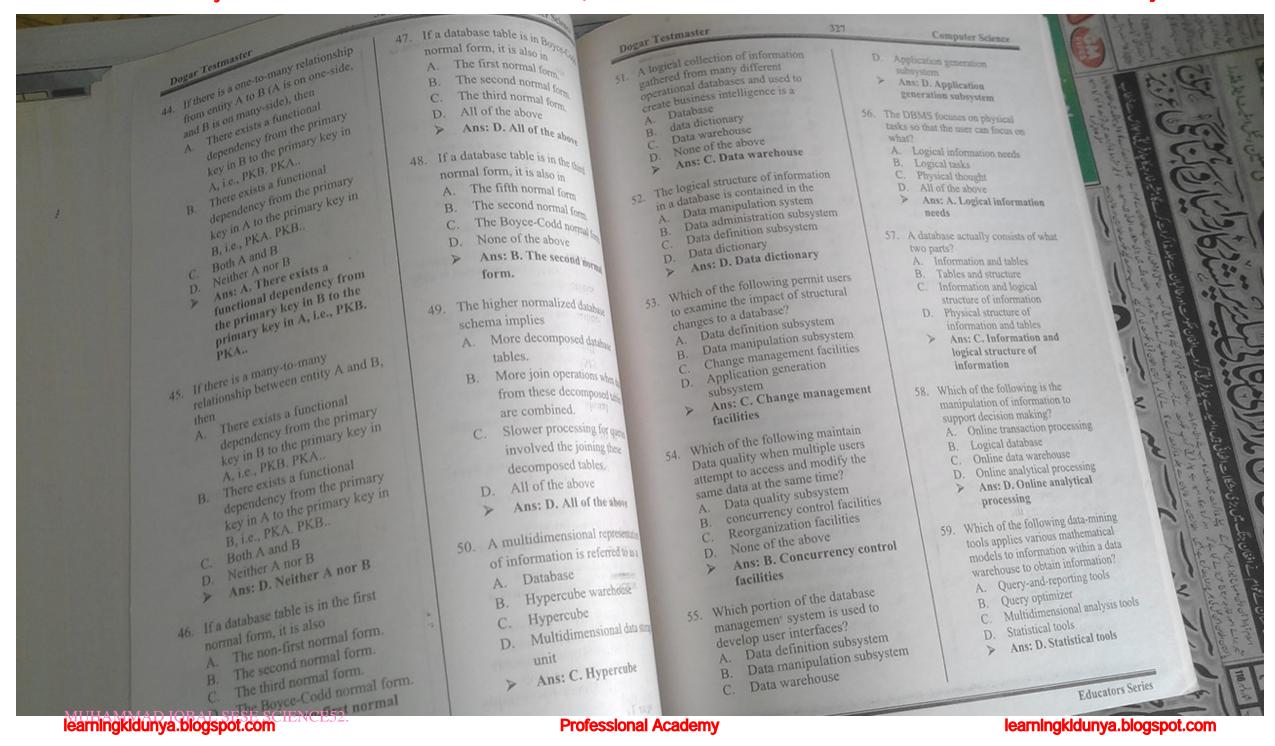
DBMS external interfaces

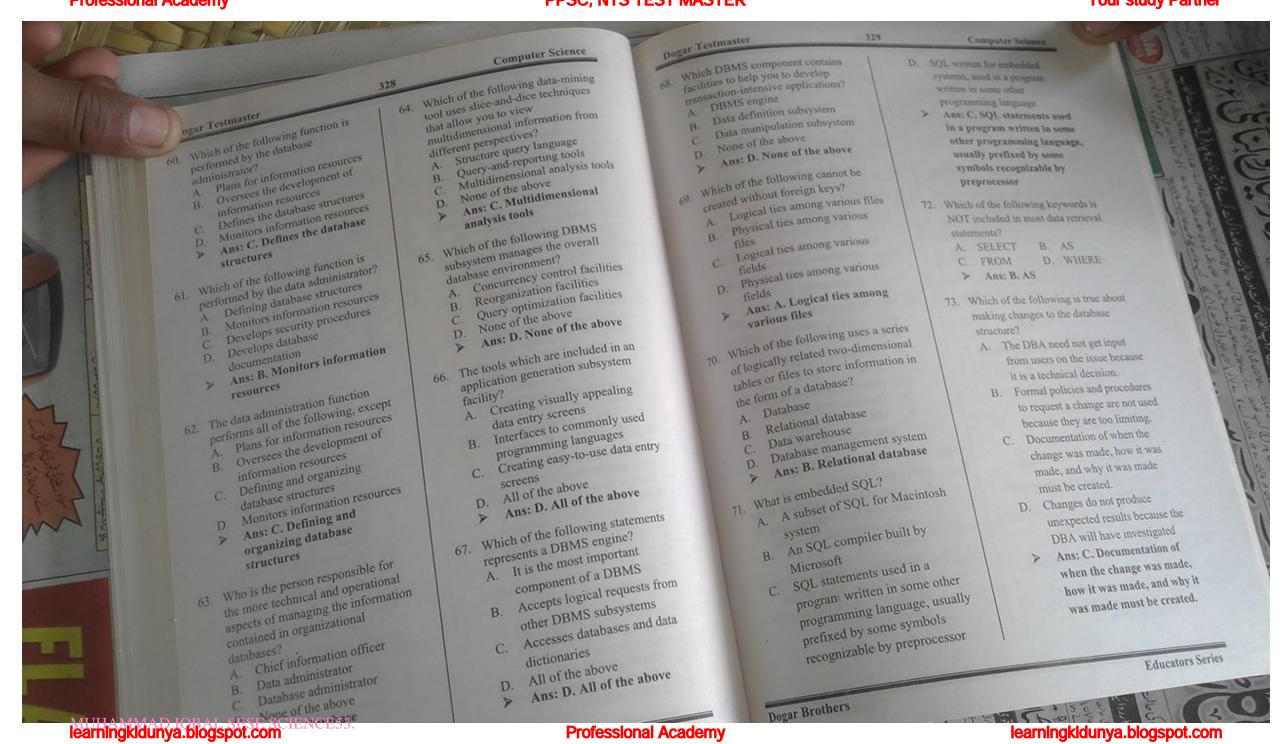




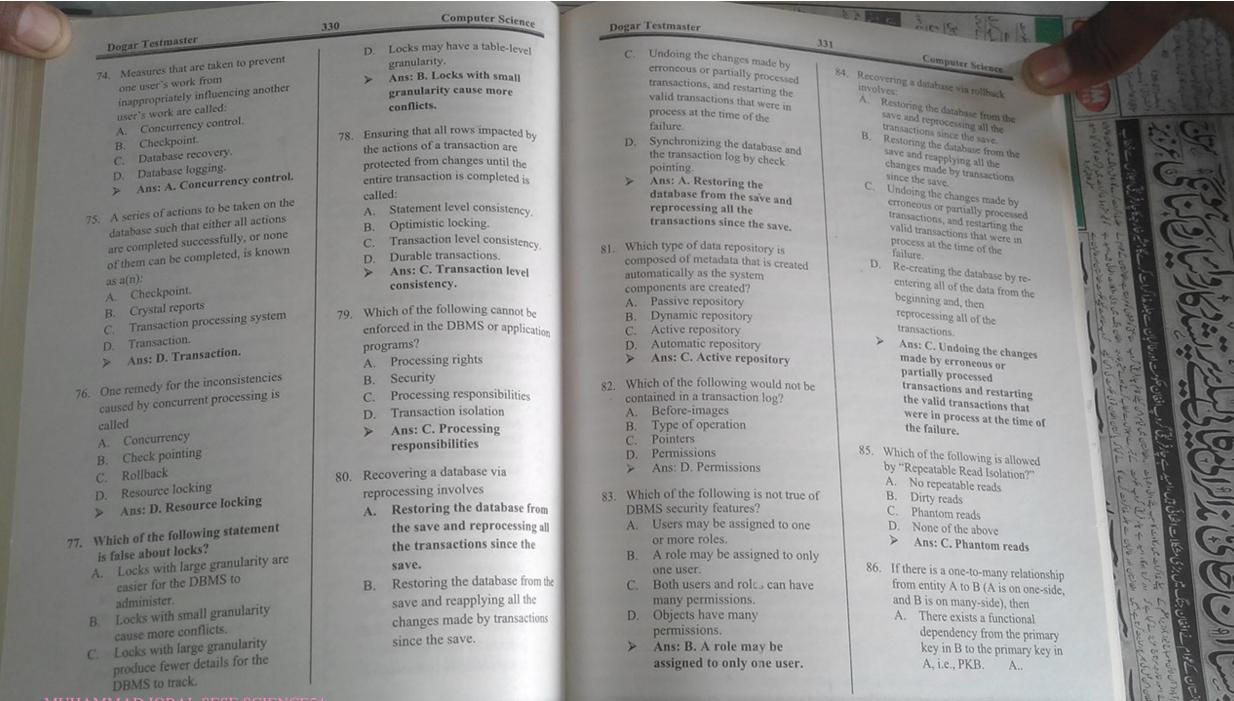
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Ī	Computer Science	Dogar Testmaster	五年 11 5 1 1 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1
3.	Which of the following is not an example of relational database?  A. dBase IV  B. 4 <sup>th</sup> Dimension  C. FoxPro  D. Reflex  > Ans: D. Reflex  Which of the following statement is not true about a relational database model which?  A. Uses a series of logical related  A. Uses a series of logical related	26. Which of the following term describes each two-dimensional table or file in the relational model? A. Database Management System B. Relational database C. Network database D. None of the above  Ans: D. None of the above  What are the two parts that compose a relational database model? A. Information and physical structure of information B. Inventory and physical structure of information	Computer Science  29. What of the following software performs the same functions as SQL?  A. DBMS B. QBE C. Crystal report generator D. MS database recorder  Ans: B. QBE  30. Which of the following data-mission tool is similar.
	information in the form of a database.  B. Uses a series of physically related two-dimensional tables to accesses information in the form of a table.  C. Uses a series of physically related two-dimensional tables or files to store information in the form of a database.  D. None of the above.  Ans: C. Uses a series of physically related two-dimensional tables or files to store information in the form of a database.	C. Information and logical structure of information D. Inventory and physical structure of information  Ans: C. Information and logical structure of information  Which of the following statement is true regarding SQL A. Structured query language (SQL) is a standardized first generation query language. B. Structured query language (SQL) is a standardized third-generation query language found in most DBMSs. C. Structured query language (SQL) is a standardized	A. Intelligent agents B. Query-and-reporting tools C. Multidimensional analysis tools D. Report generator Ans: B. Query-and-reporting tools  31. What is embedded SQL? A. A subset of SQL for Macintosh system B. An SQL compiler built by Microsoft C. SQL statements used in a program written in some other programming language, usually prefixed by some symbols recognizable by press
25	Which of the following uses a series of logically related two-dimensional tables to store information in database?  A. Database Management System B. Relational Database C. Data warehouse D. Data molding schema  Ans: B. Relational Database	language which is used to perform different operation on the database.  D. None of the above.  Ans: C. Structured query language (SQL) is a standardized language which is used to perform different operation on the database.	D. SQL written for embedded systems, used in a program written in some other programming language Ans: C. statements used in a program written in some other programming language, usually prefixed by some symbols recognizable by preprocessor

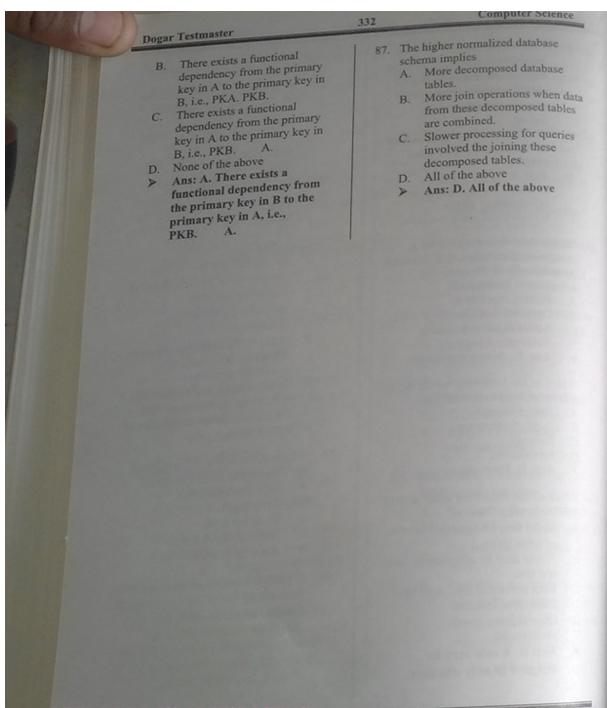


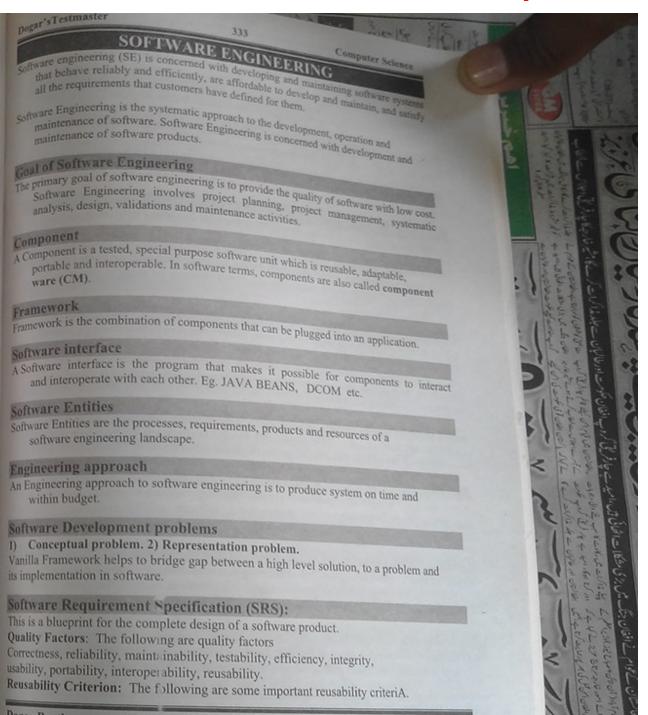




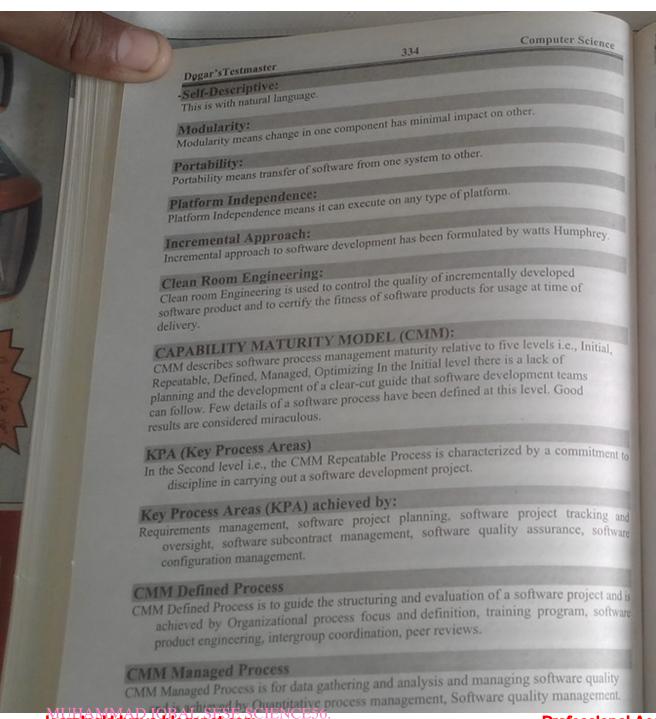
# MUHAMMAD IORAL SESE SCIENCE54 PPSC, NTS TEST MASTER







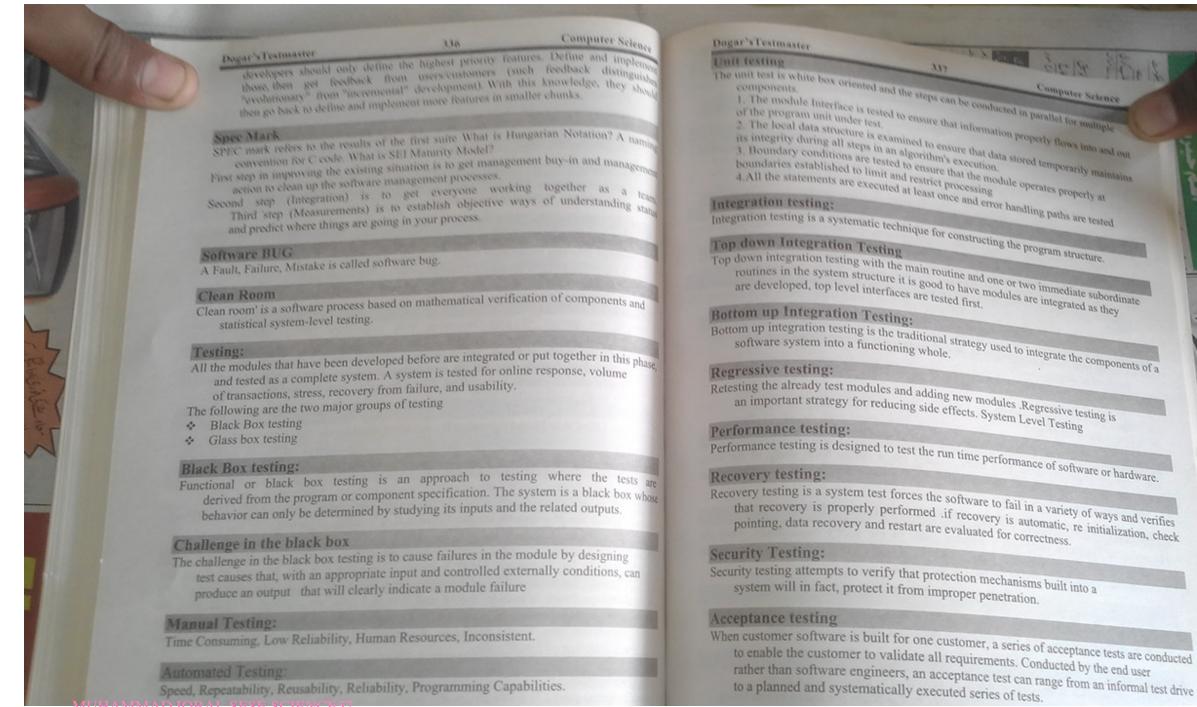
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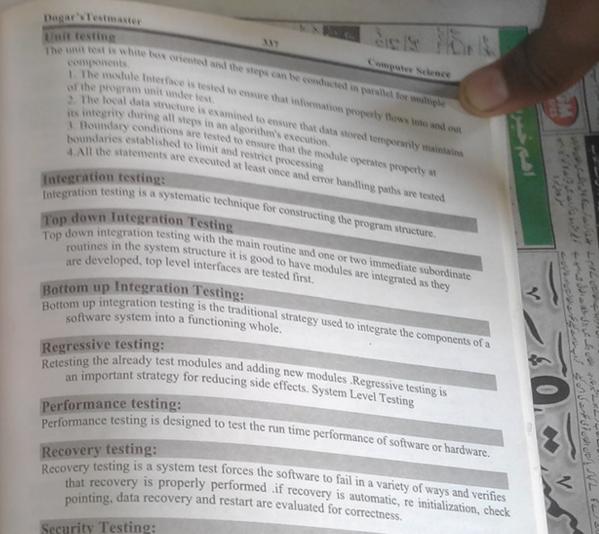


pogar's Testmaster 11 20 are 15 335 MM Optimizing Process CMM Optimizing Process is associated with defect prevention, automation of the software A Optimizing

Opti Validation occurs whenever a system component is evaluated to ensure that it satisfies Verification Verification consists in checking whether the product of a particular phase satisfies Software Evolution This is characterized by genotypes and phenotypes. This is characterizes the behavior of a population. A phenotype characterizes the behavior of a population.

A phenotype characterizes the behavior of a population member. A piterior = where || why || what || when || how || by-whom. Software Life-Cycle: Software period of time beginning with a concept for a software product and ending whenever the software is no longer available for use. The Software lifeand ending and ending includes the following: Requirements, Analysis, and Design, construction, testing (Validation), installation, operation, maintenance, and Design, construction, testing (Validation), installation, operation, maintenance, and retirement. Several models (spiral, waterfall etC.) have been proposed to describe this process. Software Life-Cycle Model Software Life-Cycle Model represents the activities, their inputs and outputs and their interactions during the life-cycle. Software Life-Cycle Models: A discipline whose aim is the production of quality software, delivered on time, within budget, and satisfying users' needs. Designing and developing high-quality software. Application of computer science techniques to a variety of problems. CASE tool CASE stands for Computer Aided Software Engineering; it can be used to mean any computer-based tool for software planning, development, and evolution. What is a Function Point ?Function points and feature points are methods of estimating the "amount of functionality" required for a program, and are thus used to estimate project completion time. The basic idea involves counting inputs, outputs, and other features of a description of functionality. Spiral Model Idea in spiral model is evolutionary development, using the waterfall model for each step; it's intended to help manage risks. Don't define in detail the entire system at first The



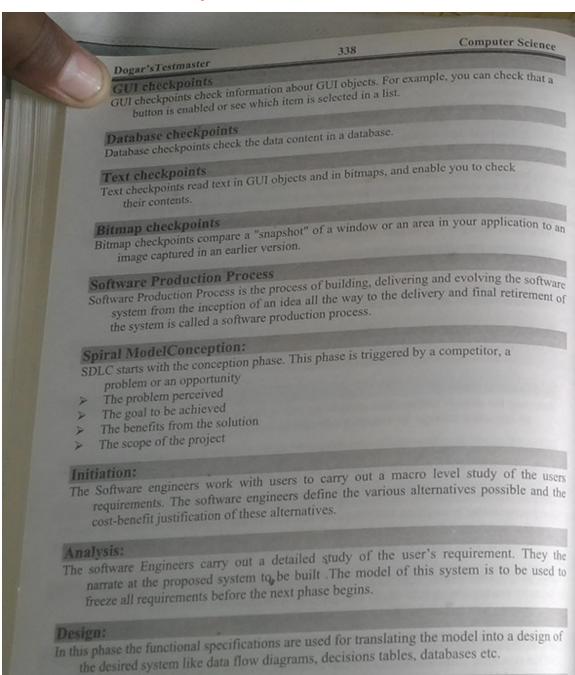


system will in fact, protect it from improper penetration.

to a planned and systematically executed series of tests.

to enable the customer to validate all requirements. Conducted by the end user

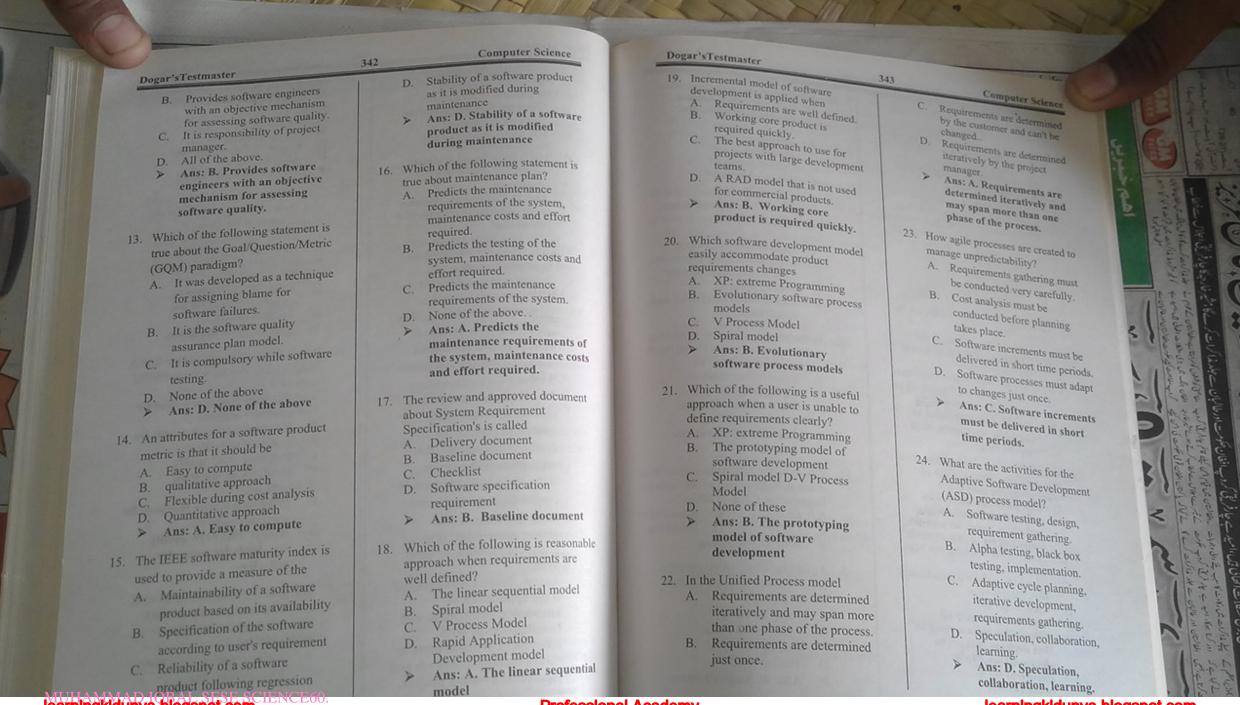
rather than software engineers, an acceptance test can range from an informal test drive

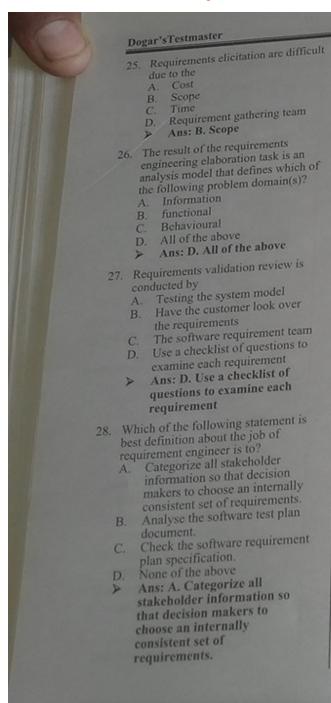


Dogar's Testmaster Implementation means converting a new system design into operation This involves mplementation: ementation means converning a new system design into operation. This involves creating computer compatible files, training the operating staff, installing hardware and The basic idea of prototyping model is instead of fixing requirements before design Prototyping Process: basic idea of prototyping moderns instead of fixing requirements before design and coding can begin, a prototype is built to understand the requirements. The and coding can began, a processpens ount to understand the requirements. The prototype is built with the know requirements by this the user can be know how the RAD Model RAD Modes

Rapid Application development is high speed adaption of the linear sequential model in d Application development is angu-speed adaption of the linear sequential model in which rapid development is achieved by using component based construction, business Incremental Model Incremental model delivers software in small but usable pieces called increments. In general each increment builds on those that have already been delivereD. In this analysis, design, coding and testing are done for every model. How can u measure the quality of your project some SDLC models.

### Computer Ser Dogar'sTestmaster SOFTWARE ENGINEERING (MCQs) Dogar's Testmaster C. Applications, data, technology 341 I. Which of the following statement is purpose of decision table is to Computer Science true about system engineering? infrastructure Which of the following option is Document all process Communications, Organization A. Modern system engineering best for the project management sequences. practices simulation of reactive financial infrastructure Guide the development of the systems is no longer necessary. Ans: C. Applications, data A. Gantt chart project specifications B. System engineering practices is technology infrastructure Network diagram Use only when building a systematic approach of system Primavera Project Manager requirement phase Which of the following element All of the above Use when a complex set of business processing engineering Ans: D. All of the above C. System engineering practices conditions appears in a simulation of proactive systems the responsibilities of the software component 10. Which of the formal methods model Ans: D. Use when a complex is no longer necessary. of software development makes use engineer for successful system set of conditions appears in a D. None of the above. of mathematical methods to? component modelling? > Ans: A. Modern system A. Define the specification for A. Physical system design engineering practices computer-based systems. Which of the following option is B. Develop defect free computer-Logical system design simulation of reactive systems near to project management? Construction and integration based systems. is no longer necessary. A. Project management is the C. Verify the correctness of Information strategy planns application of knowledge. 2. The system engineering process computer-based systems Ans: C. Construction and skills, tools, and techniques to D. All of the above. usually begins from the following integration Ans: D. All of the above. project activities in order to Which of the following statement meet or exceed stakeholder 11. Which of the following option is true A. Requirement phase true about user's desire for the needs and expectations from a about quality standards for computer B. domain view phase project. software? C. Component base view phase product specification? A. ISO 9001 quality standards for B. Project management is to A. The goal of product computer software. control the budget of any > Ans: D. World view phase engineering is to translate to B. ISO 9126 quality standards for specific project. customer's desire for a set d computer software. 3. Software engineer should consider C. Project management is the C. ISO 9001:9002 quality defined capabilities into a which of the following factors to application of knowledge. standards for computer working product. construct a system model? skills, tools, and techniques to software. B. The goal of product control the scope and time of D. ISO 13000 quality standards for A. Human resource computer software. engineering is to check the the project. Ans: B. ISO 9126 quality DFD for the requirements. D. Project management is to standards for computer divide the project in to small The goal of product software. modules. engineering is to translate it > Ans: C. Constraints Ans: A. Project management 12. Which of the following statements logical design to physical is the application of 4. In business process engineering. are true about technical product design. knowledge, skills, tools, and measurements during software which of the three architectures are None of the above techniques to project learningkidunya.blogspot.com learningkidunya.blogspot.com **Professional Academy**



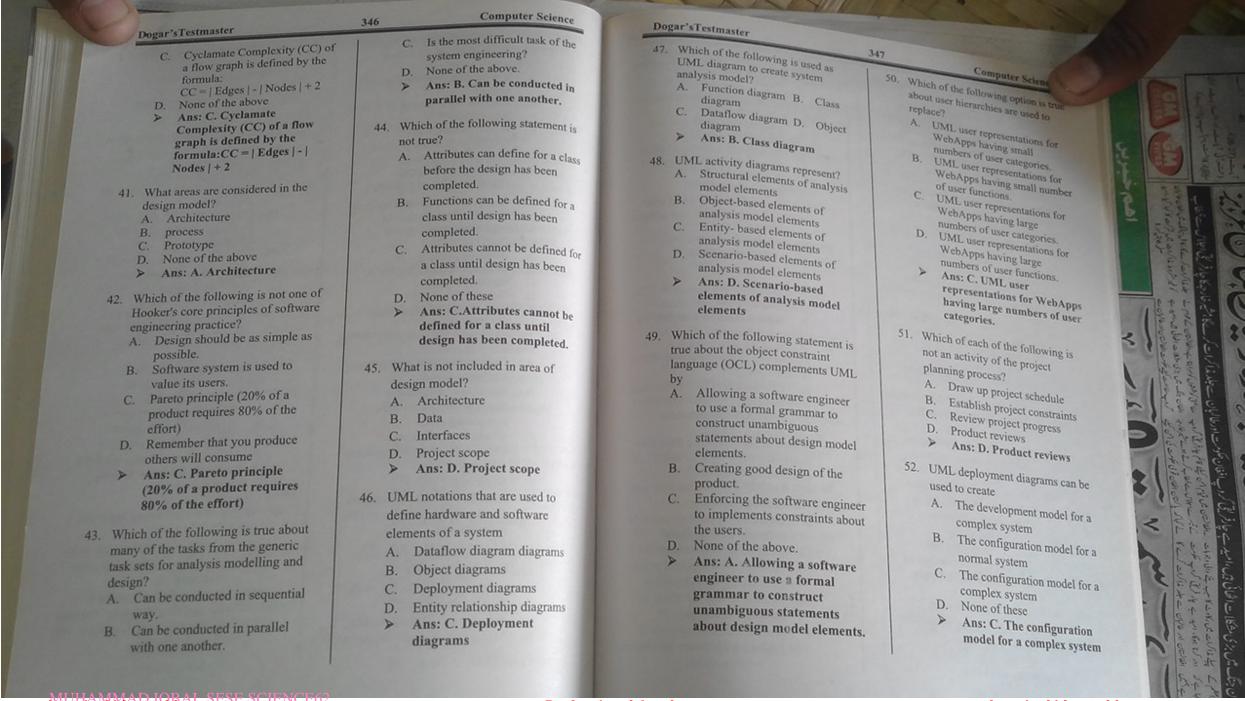


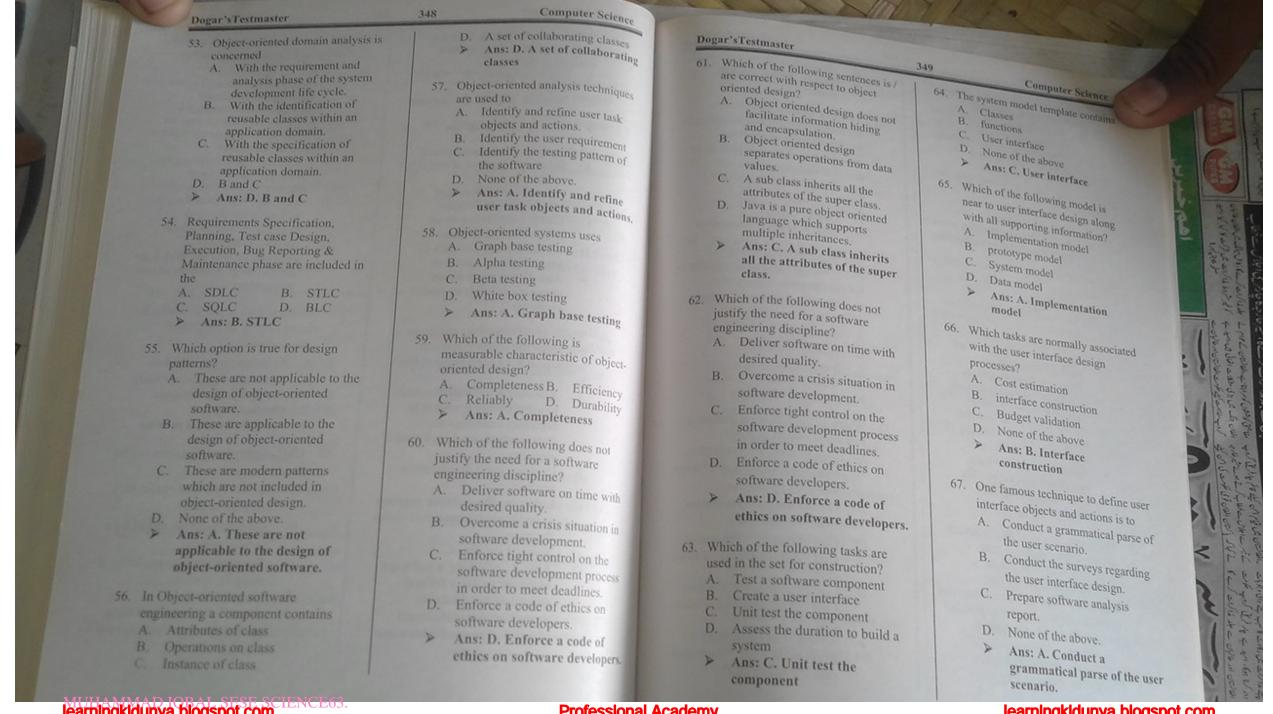
	Computer Science
344	and included requi
29.	classifications used in Quality Function Deployment (QFD)? A. Fix
	B. variable
	C. Mandatory D. None of the above
	> Ans: C. Mandatory
30.	To determine the architectural style that best fits the proposed system, requirements engineering is used to uncover
	A Algorithmic complexity
	B. characteristics and constraints C. Requirement specification D. Testing patterns
	> Ans: B. Characteristics and constraints
31.	In the process of system modelling, systems that interact with the target system are represented as  A. Tree-level systems  B. expert systems  C. Super ordinate systems  D. High level systems  Ans: C. Super ordinate systems
32.	Which of the following subject areas is not defined as part of the Software Engineering Code of Ethics?  A. Product B. management C. Client D. Modelling  Ans: D. Modelling
33.	Agile Modelling (AM) provides guidance during which of these software tasks?  A. Analysis phase B. requirement phase C. Coding phase D. Testing phase  Ans: A. Analysis phase

De	ogar'sTestmaster		
34	true about operational software prototype?  A. It is the best representation of system.  B. Is shows the complete flow of the system.  C. It is documentation specification of the product.  D. None of the above  Ans: A. It is the best representation of system.	Computer Scie  C. Maintenance, analysis, system exploration, testing D. Planning, design, coding, testing Ans: D. Planning, design, coding, testing  38. Which of the following statement is true about internal and external quality of the design? A. The customer can directly observe difference between the above two.  B. The customer can give option to change the design of the product. C. The customer can indirectly observe the internal and external quality of the design D. None of the above Ans: A. The customer can directly observe difference between the above two.  39. Software engineer has the obligations about business processing engineering? A. Requirement analysis B. Business system design C. Human resource planning D. Information strategy planning Ans: B. Business system design  40. Which of the following sentences is true?	A THE STAND OF THE
	Which of the following option is best fit for the Extreme Programming (XP) process model? A. System exploration, requirement, coding, testing B. Maintenance, analysis, design, coding	A. In white box testing, test cases are derived from the system specification.  B. Usually all the paths of a control flow graph are covered by the test cases leading to 100 % path coverage.	TO SERVICE OF THE STATE OF THE

Dogar Brothers

## MUHAMMAD IORAL SESE SCIENCE62 PPSC, NTS TEST MASTER





- 68. Which of the following is incorrect about reverse engineering?
  - Re engineering often precedes reverse engineering.
  - B. Reverse engineering supports program maintenance.
  - C. Reverse engineering is concerned with analysing the software with a view of understanding its design.
  - None of the above
  - Ans: A. Re engineering often precedes reverse engineering.
- 69. Which of the following sentences is / are not true with regard to user interface design?
  - A. First generation interfaces are command line interfaces where users have to remember and
  - B. Type commands to interact with the computer.
  - C. Graphical User Interfaces (GUIs) are the most famous interface category today.
- D. Casual users of an interface have a good understanding of the functionality and the
- > Ans: C. Graphical User Interfaces (GUIs) are the most famous interface category today.
- 70. The profile model of user interface design defines different user categories considering their capabilities, experience and objectives. What are those categories in the increasing order of expertise?
  - A. Amateur, Intermediate, Advance.
  - B. Casual, Expert, Novice.
  - C. Casual, Novice, Expert.

- Novice, Casual, Expert
- Ans: D. Novice, Casual. Expert.
- 71. To check whether the system is producing right product according to the specification of customer requirements, it is static process of
  - Validation
  - Quality Assurance
  - Verification
  - Quality Control
  - Ans: B. Quality Assurance
- 72. To check whether the system is producing right product according to the specification of customer requirements, it is dynamic process of
  - Validation
  - Quality Assurance
  - Verification
  - Quality Control
  - Ans: A. Validation
- 73. Which of the following statement is true about cost of quality?
  - A. Cost of quality = Prevention Cost + Appraisal cost + Failure cost
  - Cost of quality = Prevention Cost +Failure cost
  - Cost of quality = Prevention Cost - Appraisal cost + Failure cost
  - Cost of quality = Prevention Cost + Appraisal cost -Failure cost
  - Ans: A. Cost of quality = Prevention Cost + Appraisal cost + Failure cost

### Dogar's Testmaster

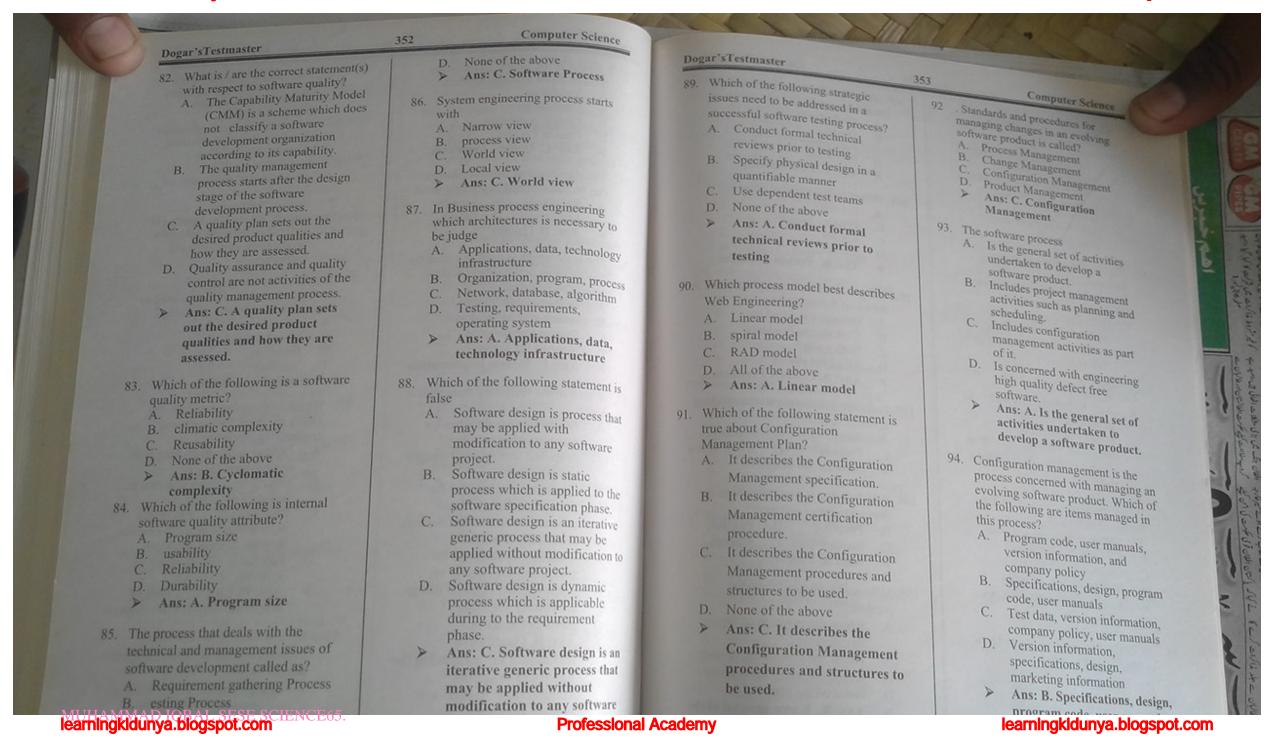
- 74. It measures the quality of processes used to create a quality product.

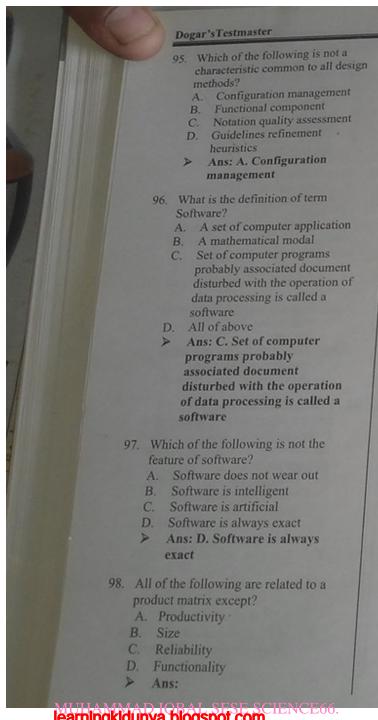
  - Verification
  - Quality Assurance
  - Quality Control
  - Ans: C. Quality Assurance
- 75. The significant of software design can be summarized in a single word
  - A. Reliability B. security Efficiency
  - Quality Ans: D. Quality
- The scale which is used to assess the quality of an architectural design should be based on
  - System accessibility
  - system requirement
  - System implantation
  - None of the above
  - Ans: C. System implantation
- 77. Which of the following statement is true?
  - A. Quantitative techniques for measuring the quality of proposed architectural designs not available.
  - B. Qualitative techniques for measuring the quality of proposed architectural designs are readily available.
  - Quantitative methods for measuring the quality of proposed architectural designs are readily available.
  - D. None of the above.
  - Ans: B. Qualitative techniques for measuring the quality of proposed architectural designs are readily available.

Computer Science 78. in software quality assurance work A. There is no difference between software verification and

351

- software validation. There is a significant difference between software verification
- and software validation. Project manager is not concerned with the quality of
- None of the above Ans: B. There is a significant difference between software verification and software validation.
- 79. Which of the following characteristics should not be used to assess the quality of a Web App?
  - A. Aesthetics
  - Moral values Durability
  - D. Fairness
  - Ans: A. Aesthetics
- 80. Which of the following does not justify the need for a software engineering discipline?
  - A. Deliver software on time with desired quality.
  - Overcome a crisis situation in software development.
  - Enforce tight control on the software development process in order to meet deadlines.
  - Enforce a code of ethics on software developers.
  - Ans: D. Enforce a code of ethics on software developers.
- 81. What are the most important software quality attribute the system should have?
  - A. Reliability B. robustness C. Correctness D c.c.

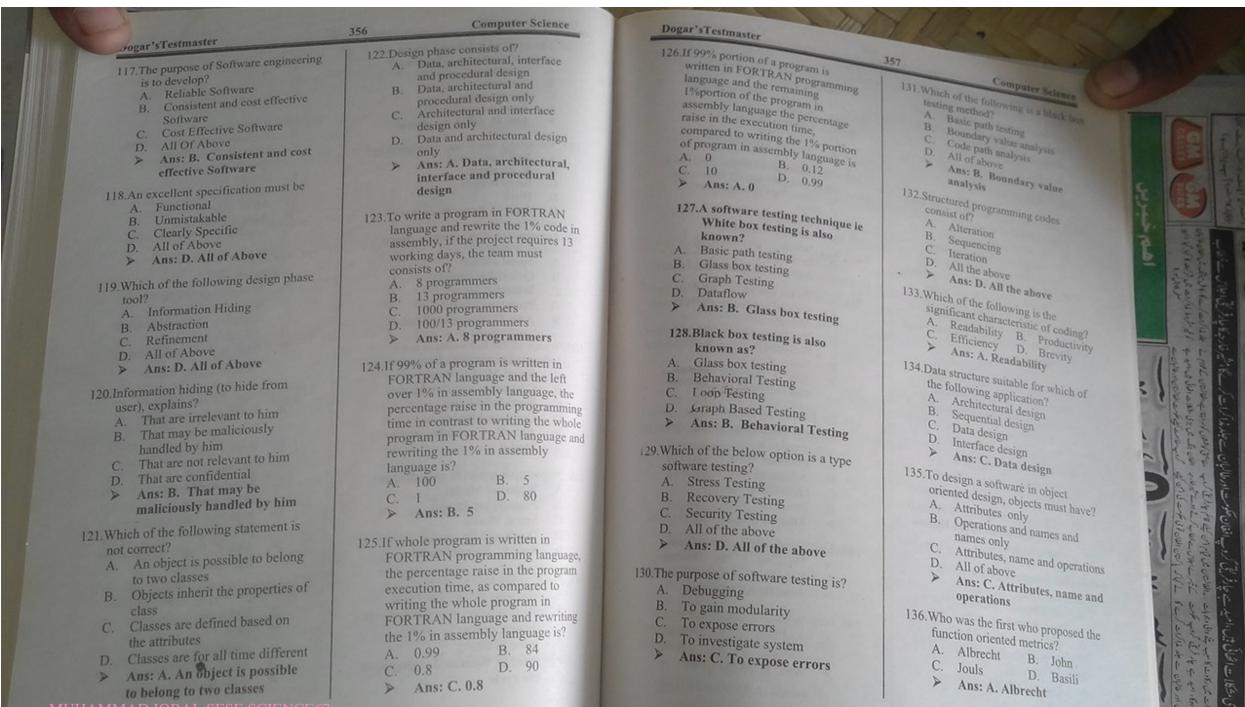


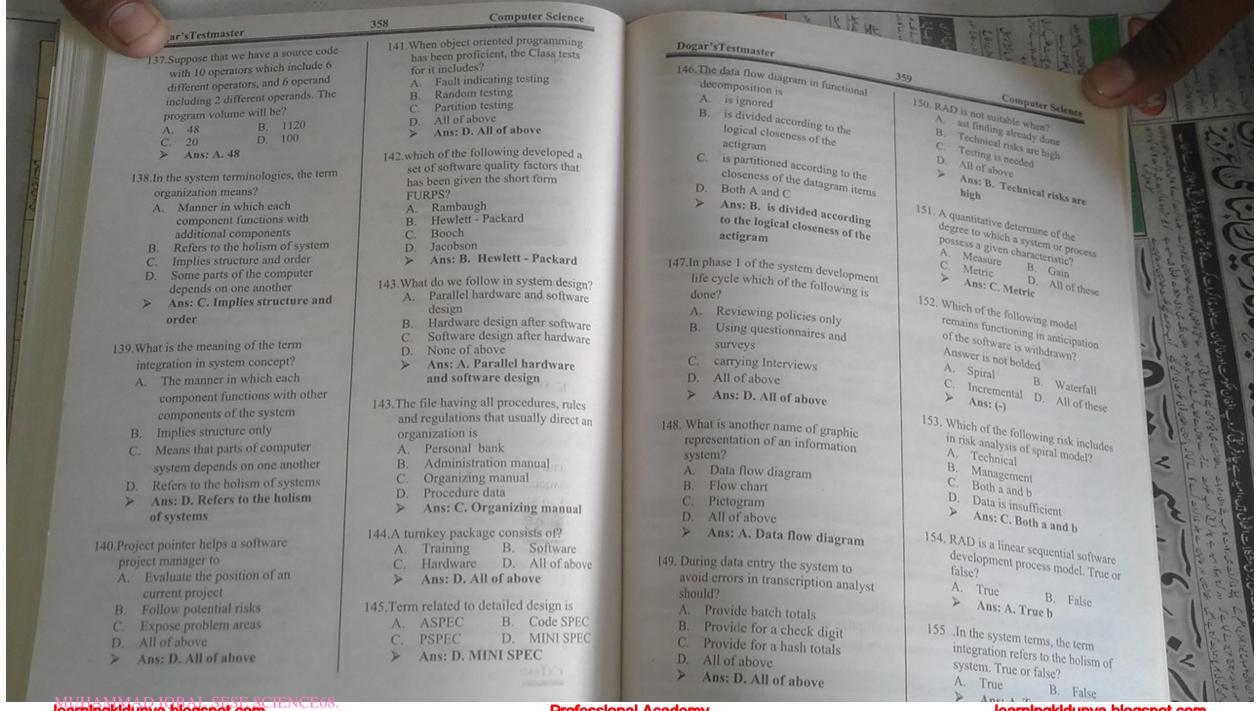


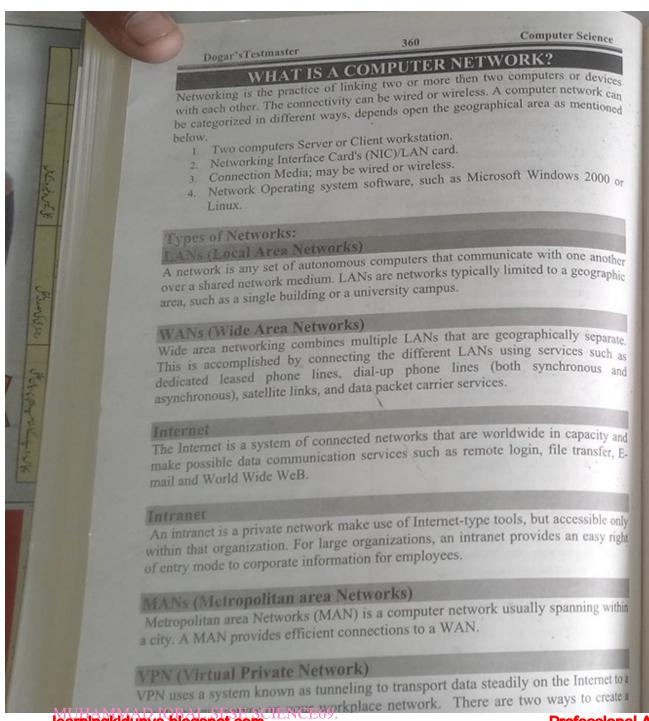
354	Computer Science
100. All o	of the following are process
metr	ic except?
A. B.	Productivity Quality
C.	Functionality
D. 1	Functionality Efficiency
A .	Ans: C. Functionality
101. Effort	s is calculated in terms of?
B. F	erson - Months
	tupees
D. N	Ionths
	ns: B. Person - Months
102. Infrast	ructure software is enclosed in
WILLOW	of following?
4000 1000	ustomized Products
	oth a and b
	I of the above
> Ar	is: A. Generic Products
103. Softwar	e development management
is needy	upon?
A. usc	2. Floulite
	cess D. All of ab
> An	s: D. All of above
104 1171:-1-0	
104. Which is	actor is most crucial in the
developi	nent of software?
A. Peo	ple B. Process
C. man	agement D. Process
> Ans	: A. People
105 Milestone	es are used for what
purpose?	are used for what
ALC: ALC: UNK	w the position of the
deve	lopment
	w the cost of the project
	w the cost of the project
D. Mone	of the above
Ans:	B. Know the cost of the

project

Dogar'sTestmaster	
106. The word	360
phase of a software is known as?  B. Function	355
1 TOCCOURSE ANDWED 202	112. Build and re-
	112. Build and Fix
C. Sub ne-	112. Build and Fix model consists of C. 3 Phases B. 2 ph.
	3 Phases B. 2 Phase
All of the	C. 3 Phases  B. 2 Phases  Ans: B. 2 Phases  113 Specific and a Phases
107. The model Spiral was developed by?  A. Bev. Littlewood  B. R. P.	113. SRS is short for?
A. Bev. Littlewood  B. P.	A. Software for?
IX. Freseman	
C. Berry Bohem	B. Software requirement system  specification
D. Bisili	specification  C. System
> Ans: C. Berry Bohem	C. System requirement Specification D. All of All o
100 F	All of AL
108. For students small projects which model is used?	
model is used? which	requirement
A. Spiral Model	requirement specification
B. Quick/ Fix model	Triodel Water on
C. Waterfall Model	
D. Prototype Med .	A. Accommo
Ans: C. Waterfall Model	A. Accommodating change B. Small Projects
oo Marin Ci	C. Complex
09. Which of the following is not a	C. Complex and large Projects  D. All of Above
THE CYCIEIN CO.	Ane. A hoove
A. Spiral Model?	Ans: A. Accommodating
B. Capability maturity Model	
	115. What do
D. Ouick and fiv Man	A. Relative to Means?
Alls: B. Capability	Application of the state of the
Model Model maturity	Development
	B. Ready A
Project risk aspect is measured in?     Waterfall Model	B. Ready Application
A. Waterfall Model	Development
B. Prototyping Model	Rapid Application
C. Spiral Model	Cyclopment
	Copeated Apple
Caron and lix model	Development Development
Ans: C. Spiral Model	1 Cloument
	Ans: C. Rapid Application
SDLC is the abbreviation of?	Princip
1. Software design life	116.RAD Mod 1
o. System development lic.	A. Motorals
C. System design life cycle	TOTOIOIA
D. None of above	B. IBM
Anc. P. C	C. Microsoft
Ans: B. System development	
life cycle	1 CCIIIIO I Ograe
omy.	Ans: R TRM







**Your study Partner** Dogar'sTestmaster VPN connection, by dialing an Internet Service Provider (ISP), or Ethernet is the most accepted physical layer LAN technology which can transmit Ethernet data at a rate up to 10 Megabits per second (10 Mbps). Ethernet is popular because it data at a rate up to the second (10 Mbps). Ethernet is popular because it strikes a good balance between speed, cost and ease of installation. The Institute for Electrical and Electronic Engineers developed an Ethernet standard known as IEEE Fast Ethernet The Fast Ethernet standard (IEEE 802.3u) has been well-known for Ethernet networks that require higher broadcast speeds. This standard raises the Ethernet speed limit from 10 Mbps to 100 Mbps with only minimal changes to the existing cable structure. Fast Ethernet provides faster throughput for video, multimedia, graphics, Internet surfing and stronger error detection and correction. Gigabit Ethernet Gigabit Ethernet was designed to meet the requirements for faster communication networks with applications such as multimedia and Voice over IP (VoIP). It is also known as "gigabit-Ethernet-over-copper" or 1000Base-T, GigE is a description of 10 Gigabit Ethernet 10 Gigabit Ethernet is the fastest and most recent of the Ethernet standards. IEEE 802.3ae defines a version of Ethernet with a nominal rate of 10Gbits/s that makes it Asynchronous Transfer Mode (ATM)

ATM is a cell-based fast-packet communication method that can carry data-transfer rates from sub-T1 speeds to 10 Gbps. ATM achieves its high speeds in part by transmitting data in fixed-size cells and dispensing with error-correction protocols. ATM can be integrated into an existing network as needed without having to update Dogar's Testmaster

Power over Ethernet (1012)
PoE is a solution in which an electrical current is run to networking hardware over PoE is a solution in which all electrical characteristics of the Ethernet Category 5 cable or higher. This solution does not require an extra AC the Ethernet Category 5 capit of higher. This reduces the amount of cable needed as well power cord at the product location. This reduces the amount of cable needed as well as eliminates the difficulties and cost of installing extra outlets.

A network protocol defines rules and conventions for communication between network devices. Protocols for computer networking all generally use packet switching techniques to send and receive messages in the form of packets.

# Introduction to TCP/IP Networks

TCP/IP-based networks play an increasingly important role in computer networks Perhaps one reason for their appeal is that they are based on an open specification that is not controlled by any vendor.

# What Is TCP/IP?

TCP stands for Transmission Control Protocol and IP stands for Internet Protocol The term TCP/IP is not restricted just to these two protocols, however, often, the term TCP/IP is used to pass on to a group of protocols connected to the TCP and IP protocols such as the User Datagram Protocol (UDP), File Transfer Protocol (FTP) Terminal Emulation Protocol (TELNET), and so on.

## Network Media

Network media can be classified as wired media and wireless mediA. In the network commonly used wired media is coaxial cable, fiber optic and Twisted pair cable.

Coaxial cabling is the primary type of cabling used by the cable television industry and is also widely used for computer networks such as Ethernet Although more expensive than standard telephone wire, it is much less susceptible to interference and can carry much more data.

# Fiber Optic Cable

As we all know fiber optics are pretty darn cool and not cheap. This cable is smaller and can carry a vast amount of information fast and over long distances.

## Twisted Pair Cables

Dogar'sTestmaster

A Se Such Se Fil Shielded Twisted-Pair (STP) cabling is used commonly in the computer science impedance of 150 ohms, has a maximum language scoop puter networks. It has an impedance of 150 ohms, has a maximum length of 90 meters, and is used first and foremost in networking environments with a high amount of EMI due to motors, air conditioners, power lines, or other noisy electrical components. STP cabling is the default type of cabling for IBM Token Ring networks.

# Unshielded Twisted Pair (UTP)

This is the most popular form of cables in the network and the cheapest form that you can go with. The UTP has four pairs of wires and all inside plastic sheathing. The biggest reason that we call it Twisted Pair is to protect the wires from interference from themselves. Each wire is only protected with a thin plastic sheath.

10Base2 is measured the thin Ethernet, thinnet, and thinwire which uses light 10Base 2 is incastical and the state of the coaxial cable to create a 10 Mbps network. The cable segments in this network can't be over 185 meters in length. These cables connect with the BNC connector.

This is well thought-out a thicknet and is used with coaxial cable arrangement such as the BNC connector. The good side to the coaxial cable is the high-speed transfer and cable segments can be up to 500 meters between nodes/workstations.

### 10BaseT

The "T" stands for twisted as in UTP (Unshielded Twisted Pair) and uses this for 10Mbps of transfer. The down side to this is you can only have cable lengths of 100

## 100Base T

It is considered Fast Ethernet uses STP (Shielded Twisted Pair) reaching data transfer of 100Mbps. This system is a little more expensive but still remains popular as the 10BaseT and cheaper than most other type networks.

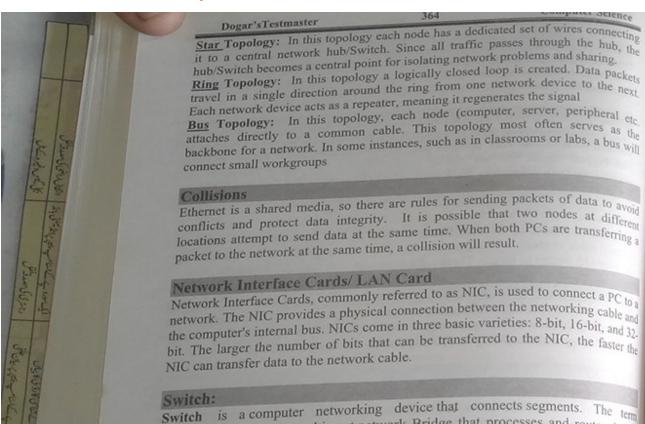
### 10BaseF

A type of standard for implementing Ethernet networks. 10BaseF is different from other 10-Mbps Ethernet technologies because it uses fiber-optic cabling instead of copper UTP cabling 10BaseF is based on the 802.3 specifications of Project 802

## Network Topologies

What is a Network topology?

A network topology is the Physical arrangement of nodes and cable links in a LAN.



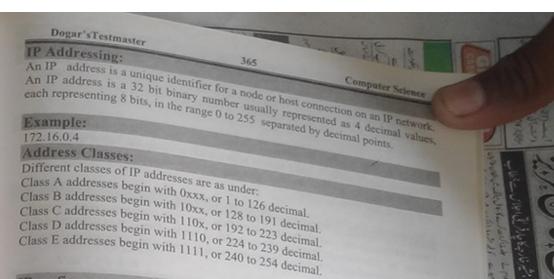
commonly refers to a multi-port network Bridge that processes and routes data at the data link layer. Switches that additionally process data at the network layer and above are often referred to as Layer 3 switches

### Bridges:

Bridges connect different networks types (such as Ethernet and Fast Ethernet) or networks of the same type. Bridges map the Ethernet addresses of the nodes residing on each network segment and allow only necessary traffic to pass through the bridge.

### Routers:

Routers filter out network traffic by specific protocol rather than by packet address Routers also divide networks logically instead of physically. In complex networks overall efficiency is improved by using routers.



### **IPconfig**

ipconfig is a command line utility available on all versions of Microsoft Windows

NT. ipconfig is designed to be a few forms. starting with Windows NT. ipconfig is designed to be run from the Windows command prompt. This utility allows you to get the IP address information of a Windows computer. It also allows some control over active TCP/IP connections.

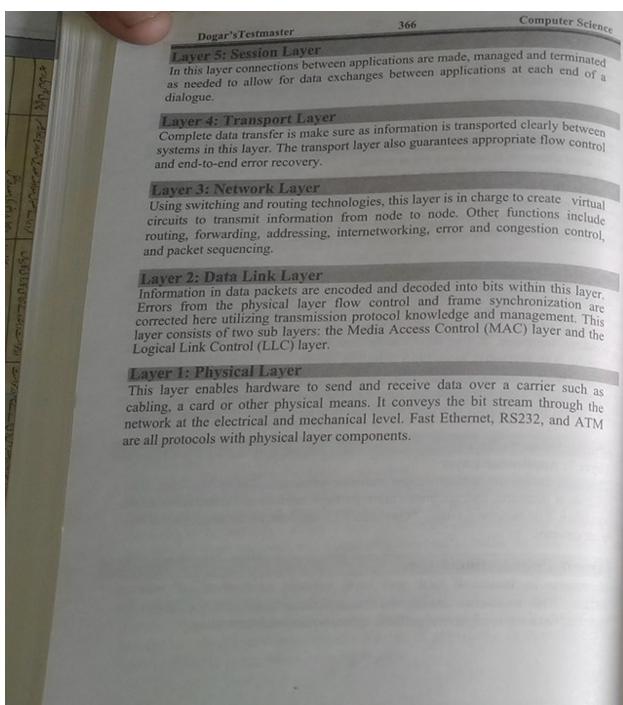
Traceroute on Unix and Linux (or tracert in the Microsoft world) attempts to trace the current network path to a destination. Here is an example of a traceroute run to

## Laver 7: Application Layer

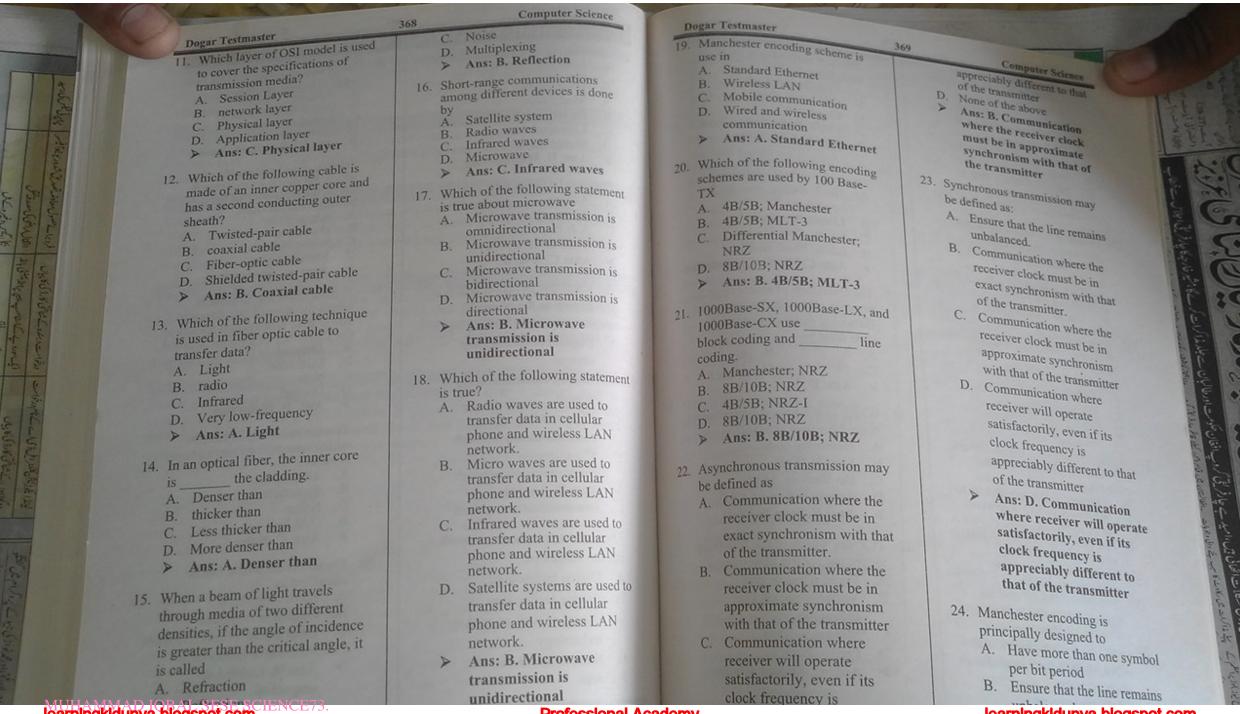
This layer chains the application and end-user processes. Within this layer, user solitude is measured and communication partners, service and constraints are all identified. File transfers, email, Telnet and FTP applications are examples of this

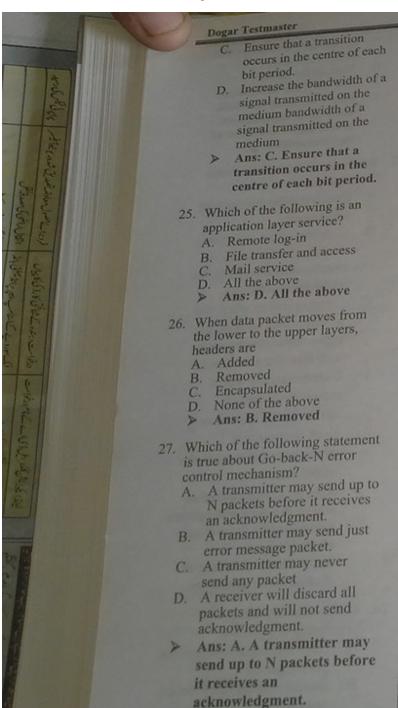
# Layer 6: Presentation Layer

Information is translated back and forth between application and network formats. This translation transforms the information into data the application layer and network recognize regardless of encryption and formatting.



Dogar'sTestmaster		
COMPA		
COMMUNICATION&  1. The sharing of a medium and its link by two or more than two devices is called  A. Modulation  B. De-multiplexing  C. Line discipline  D. Multiplexing  Ans: D. Multiplexing	types of analog services  A. Switched; circuit C. Switched; in-band D. None of the above  Ans: C. Switched; leased	
2. Data can be defined as A. Analog B. digital C. A & B D. None of the above Ans: C. A & B	which the signal loses strength due to the resistance of the transmission medium. A. Attenuation B. Distortion C. White Noise D. Impulse pair	
<ul> <li>4. The telephone network, which is also known as the plain old telephone system (POTS), was</li> <li>A. Digital communication system</li> <li>B. Analog communication system</li> <li>C. 3<sup>rd</sup> generation communication network</li> <li>D. 1<sup>st</sup> generation communication network</li> <li>Ans: B. Analog communication system</li> </ul>	Ans: A. Attenuation  8. Transmission impairment in which the signal loses strength due to the propagation speeds of the frequency of a signal is called A. Attenuation B. Distortion  C. Noise D. Decibel Ans: B. Distortion  9. Transmission impairment in which crosstalk corrupts a signal is called. A. Attenuation B. distortion C. Noise D. Data loss	اميد ب عارفريق كروب افغان مكون الدطاليان سيطيفية كراك الرفي الموادية المعالى الموادية المواد
<ul> <li>5. The modern telephone network has the feature of</li> <li>A. Digital technology</li> <li>B. Analog technology</li> <li>C. Digital as well as analog technology</li> <li>D. None of the above</li> <li>Ans:</li> </ul>	Ans: C. Noise  10. Transmission media can be classified as A. Fixed or unfixed B. Guided or unguided C. Determinate or indeterminate D. Metallic or nonmetallic  Ans: B. Guided or unguided	ام نے افغال جنگ میں بڑی مشکلات افغال ہیں۔ اور انداز کا میں میں میں میں میں اور انداز کا ا





		M	PPS	MN C,	IAD IORA VTS TES
3/0	1177	nich of th	e follo	win	Delence
28	det	ection m	ethod	uses	one's
	col	nplemen	t?		
	A.	Even p Odd pa			
	B. C.	Checks	aum		
	D.	Cyclic	Redur	ndan	cy Check
	A	Ans: C	. Che	ckst	ım
29.	Co	ding sch	emes c	an b	oe .
-	cat	egorize i	n to th	e fo	llowin
100	A.	Block	coding	; m	odulo-2
	-	operati			
	B.	Linear; Block;			
1	D.	Linear	block	cod	ina
	A	Ans: C	. Bloc	ek; (	Convolution
					попппон
30.	The	correct	ion of	erro	ors up to 5
	LIO	ors in an	ictore	, the	minimum
	cod	nming d	e e	e in	a block
	A.	7		B.	6
		10		D.	
	A	Ans: D	. 11		
31.	Wh	ich of th	e foll	owi	ng technique
	is u	sed for 1	low c	ontr	ol?
	A.	Hamm	ing co	de	
	B.	Stop-N	-Wait	t	

C. Go-Back-N ARO D. Selective-Repeat ARO Ans: B. Stop-N-Wait 32. TCP use which of the following technique for the flow control?

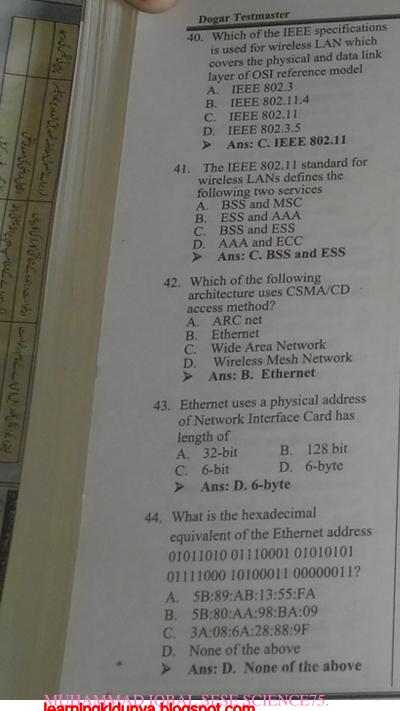
> A. Fixed window size Variable packet size technique

C. Sliding window

Parity check

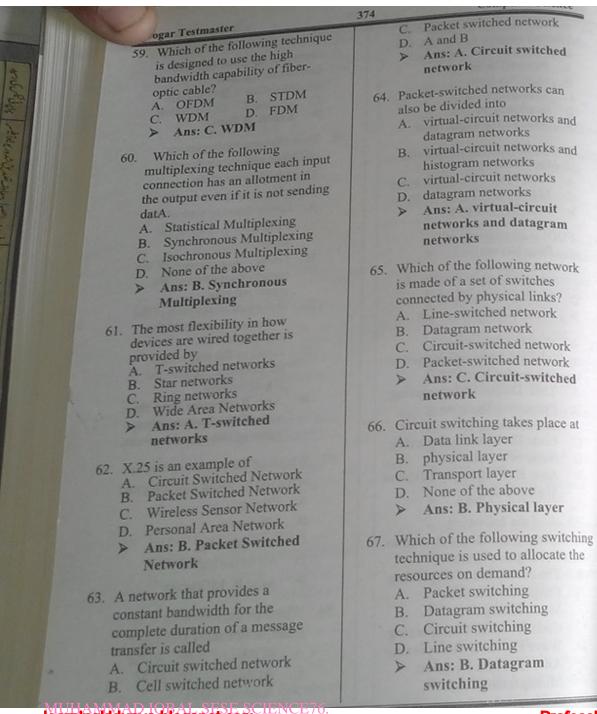
Ans: C. Sliding window

	A ROLL OF THE RESIDENCE OF THE PARTY OF THE
Dogar Testmaster	
Which Cat	371
A. FTP B. TFTP C. IP D. UDD	B. Point to Point protocol helps communication between
34. A technique which restrict the amount of data that the sender can send before waiting for acknowledgment.  A. Flow control	Cable. C. Point to Point protocol helps correction. D. Point to Point protocol helps tin flow or point protocol helps.
B. multiplexing C. Data rate D. Error control  Ans: A. Flow control	protocol helps communication between 2 cable.
<ul> <li>35. Which of the following two techniques are common for flow control</li> <li>A. Feedback-based flow control</li> <li>B. Rate-based flow control</li> <li>C. Forward flow control</li> <li>D. A and B</li> <li>Ans: D. A and B</li> </ul>	38. Which of the following is a three-way hand-shaking authentication protocol using point to point protocol which keeps the password secret?  A. Link control protocol B. Challenge Handshake Authentication Protocol C. Transmission
36. Which of the following term is used to define a (PDU) that is like to HDLC up to some extent?  A. Logical link control  B. Media access control  C. Logic link unit  D. Data unit  Ans: A. Logical link  control	D. Password authentication protocol Ans: B. Challenge Handshake Authentication Protocol  39. A standalone process
37. Which of the following statement is true about point to point protocol  A. Point to Point protocol helps communication between 2 computers over a cross-over cable.	been modified to work on a LAN by including concurrency controls is called A. LAN intrinsic software B. LAN data software C. Shareware software D. LAN sharing software  Ans: A. LAN intrinsic software

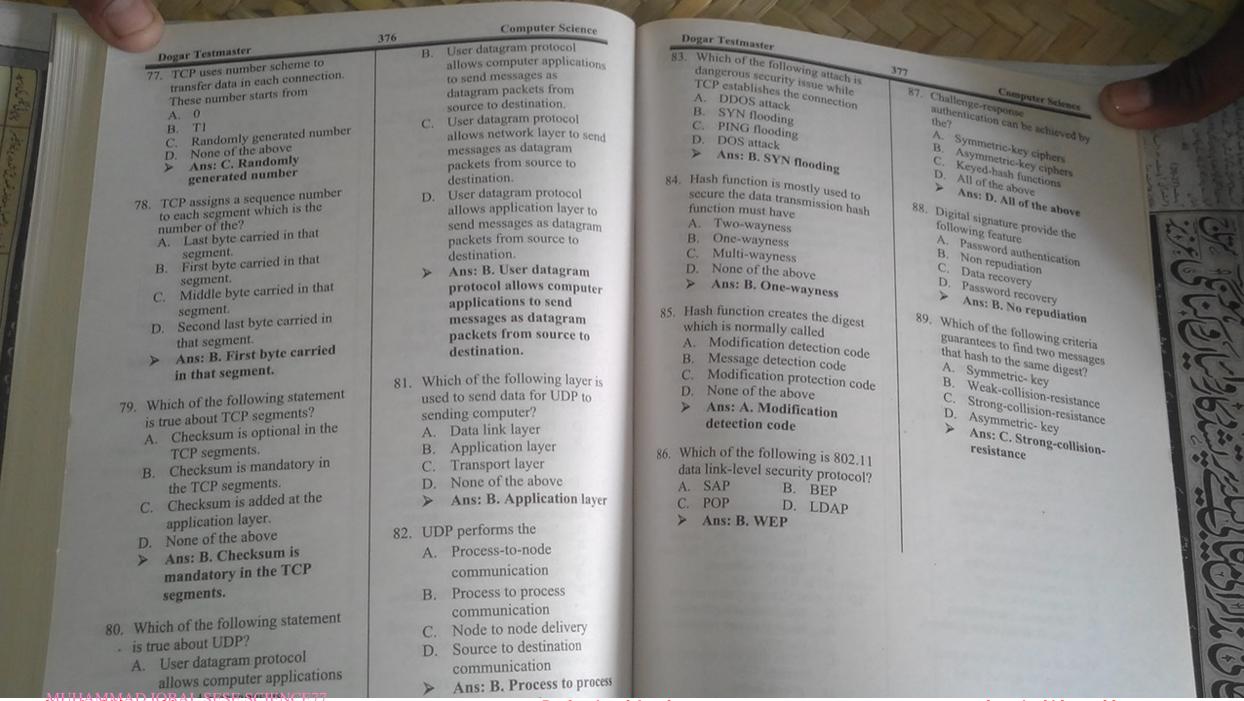


	PPSC, NTS TEST
372	Computer Science
45	Which of the following is Ethernet Multicast address then this is a address?  A. 07:01:05:03:05:05, B. 07:01:02:03:04:05, C. 04:07:02:03:04:05, D. 07:01:04:06:04:05,  ➤ Ans: B. 07:01:02:03:04:05,
46.	If Ethernet destination address is 08:07:06:05:44:33; then it is called  A. Multicast address B. nicest address C. Broadcast address D. Logical address  Ans: B. Unicast address
47.	Which of the following is not Ethernet unicast destination? A. 44:AA:C1:23:45:32 B. 43:7B:6C:DE:10:00 C. 46:56:21:1A:DE:F4 D. 48:32:21:21:4D:34 ➤ Ans: B. 43:7B:6C:DE:10:00
48.	Which of the following is used as LAN protocol widely?  A. CSMA/CD  B. logical link control  C. Ethernet  D. Point to point protocol  Ans: C. Ethernet
49.	Which of the following technique is used by the IEEE 802.3 Standard for CSMA/CD as the access method for first-generation 10-Mbps Ethernet? A. p-persistent B. 1-persistent C. q-persistent D. None of the above Ans: B. 1-persistent

ASTER	rour study raintici
Dogar Testmaster  50. Which of the following layer of layer and the MAC sub layer?  A. Physical layer  B. Data link layer  C. Transport layer  D. Session layer  Ans: B. Data link layer  51. The maximum frame length for 10-Mbps Ethernet is  A. 1500 bytes B. 1518 bytes  C. 1510 bytes D. 1520 bytes  Ans: B. 1518 bytes  52. FDDI is an example of  A. Ring Network  B. Star Network  C. Mesh Network  D. Bus based Network  D. Bus based Network  53. Which of the following multiplexing technique is used to transmit analog signals?  A. Time Division Multiplexing  B. Frequency Division  Ethernet consists of the LLC sub  Alexed Sub layer of  In a consist of the LLC sub  Ans: A. Ring Network  Session layer  A. Time Division Multiplexing  B. Frequency Division  B. Frequency Division	Sources of the same data rate, sources of the same data rate, A. N+n slots B. N slots Ans: B. N slots  Ans: B. N slots  Time Division Multiplexing technique guarantees that the transmission rate of the multiplexed path is normally A. Lesser than the sum of the transmission rates of the signal sources.  B. Greater than the sum of the transmission rates of the signal sources. C. Not equal to the sum of the signal sources. D. Equal to the sum of the signal sources.  Equal to the sum of the signal sources.  D. Equal to the sum of the signal sources.
51. The maximum frame length for 10-Mbps Ethernet is A. 1500 bytes B. 1518 bytes C. 1510 bytes D. 1520 bytes  Ans: B. 1518 bytes	C. n-1 slots B. N slots Ans: B. N slots  Ans: B. N slots  56. Time Division Multiplexing technique guarantees that the multiple m
B. Star Network C. Mesh Network D. Bus based Network Ans: A. Ring Network	transmission rates of the signal sources.  B. Greater than the sum of the transmission rates of the signal sources.  C. Not course.
transmit analog signals?  A. Time Division Multiplexing B. Frequency Division Multiplexing C. Code Division Multiplexing	D. Equal to the sum of the transmission rates of the signal sources.  Ans: B. Greater than the
> Ans: B. Frequency Division Multiplexing	Which of the following can be
54. Which of the following multiplexing technique is used to transmit digital signals? A. Time Division Multiplexing B. Frequency Division Multiplexing	B. efficiency C. Anti-jamming D. All of the above
C. Code Division Multiplexing D. Wave Division Multiplexing Ans: A. Time Division Multiplexing	Ans: B. Efficiency  58. Which of the following is an example of analog technique?  A. FDM B. WDM C. ACM D. FCM



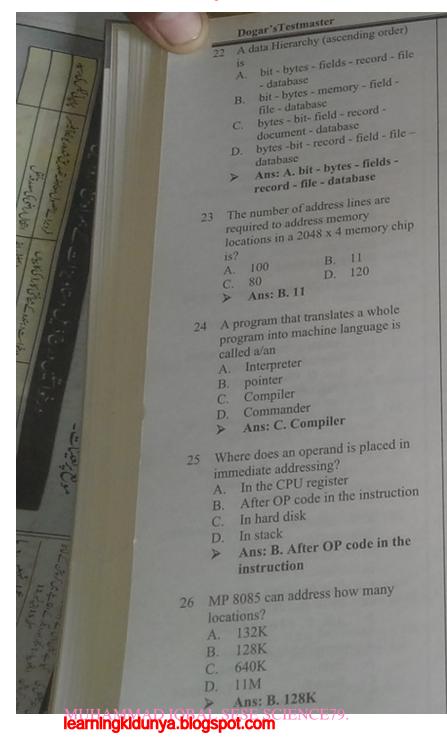
Dogar Testmaster	
68. Which of the following network is a cross between a circuit-	375
switched network and a datagram	
network and a d	73. How many bits are used as poly.  A. 8
A Dos	address in Thits are used
Add Draps	address in TCP/IP?
B. Packet-switched network	C. 32 B. 16
	Ans: B. 16 D. 48
D. Line-switched network  Ans: C. Viete	74 11-
	74. User datagram packets are encapsulated in?
	encapsulated in?
69. Packet switch network contains.  A. 4 type of components.	
A 4 type of network contains	B. IP datagram
A. 4 type of components  B. 2 type of components	C. TCP segment
	Ans: C. TCP
o type of component	75. TCP is a an example of A. Connection
Aus. A. 4 IVDe of	TCF IS 3 2m
components	A. Connection le
	A. Connection-less protocol  B. Stream-oriented protocol  C. Message-oriented
O. Switch uses a routing table in	C. Messa
datagram network that is based	C. Message-oriented protocol D. Line-oriented protocol
on?	D. Line-oriented protocol  Ans: B. Street
A. Source address	Ans: B. Stream-oriented
B. logical address	protocol
C. Destination address	
D. Physical III	76. TCP uses the buffer because A. The sending
D. Physical address  Ans: C Destination	A. The sending and the
> Ans: C. Destination	receiving and the
address	l cociving proge
ID address of a day	write or read data at the same
I. IP address of a destination is	speed.
given in the routing table in the	B. The are y
following follwarding scheme	B. The sending and the
A. Source-specific	receiving processes have
B. destination-specific	same speed to
C. Host-specific	same speed to transfer the data.
D. None of the above	and.
> Ans: D. None of the above	C. The sending and the
	Teceiving and the
Which of the following protocol	receiving processes contains
provides full tropped protocol	die complex dat A
provides full transport layer	D. The sending and the
services to applications?	received and the
A. ICMP B. TCP	receiving processes man
0 100	write or read data at low
C. ARP D. RARP  Ans: B. TCP	speed.



### Dogar'sTestmaster Dogar's Testmaster COMPUTER ARCHITECTURE AND ORGANIZATION All computers processors must have A computer adds and compares data R/WM reserved for storing memory unit information Control unit D. A 16-bit memory address A. keyboard stored in microprocessor All of above B. monitor Ans: D. All of above Ans: C. A set of memory CPU chi locations in R/WM reserved What is the function of control units Memory chip for storing information Hoffman Code Ans: C. CPU chi NRZ code 2 A register which is used to keep EBCDIC code A stack pointer performs To transfer data Indicate the beginning of the Ans: D. EBCDIC code track of address of the memory To store data 17 The address of the instruction stack memory. To perform logic operations location? A register that decodes and To decode program instruction following the CALL instructions A. Address Register executes 16-bit arithmetic Ans: D. To decode program stored in/on the when a subroutine is B. Data Register expression. Instruction Register C. A memory location where a Stack pointer Program Counter subroutine address is stored 13 What does dedicated computer adder Ans: D. Program Counter D. A register in which flag bits are Program counter stored Which is used by one person at 3 A microcomputer system have? Stack Ans: A. Indicate the Ans: D. Stack A. Memory beginning of the stack Which is assigned to one and A string of 0's and 1's micro program B. microprocessor memory. Peripheral equipment only one task Symbolic macroinstruction D. All of above The decision making capabilities Which does one kind of Ans: D. All of above provided by branch logic in the Bit microinstruction function Symbolic mini micro program control unit is called Which is meant for application Which of the following function is Binary micro program A. Controller transfer software Ans: D. Binary micro not performed by CPU? procedural transfer Ans: B. Which is assigned to Unconditional transfer program A. Data display one and only one task Interrupts which are initiated by an All of above logic operation Ans: C. Unconditional instruction are which of the Arithmetic operation 14 CPU employs which type of following transfer To execute instructions technique most commonly? A. Internal Ans: A. Data display An Interrupt which is started by an C. Hardware D. Input B. external A. immediate instruction is called Ans: B. External direct Pipelining is also known as B. output Internal 20 RISC architecture in memory access Register A. Instruction execution Hardware D. Software All of the above is limited to instructions Ans: D. Software B. instruction prefetch Ans: D. All of the above A. CALL and CLEAR Program decoding 10 A time sharing system involve B. USH and POP Instruction manipulation A. More than one processor 15 Pipeline performs Ans: B. Instruction prefetch C. STA and LDA More than one program in A. Fetch instruction D. MOV and JMP memory Which of the following is a stack? > Ans: C. STA and LDA decode instruction More than one memory in the A. An 80-bit register in the C. Fetch operand 21 A group of 8 bits is known as system All of above All of above memory A. Byte Ans: B. More than one Ans: D. All of above ALLIA B. A 16-bit register in the C. Record

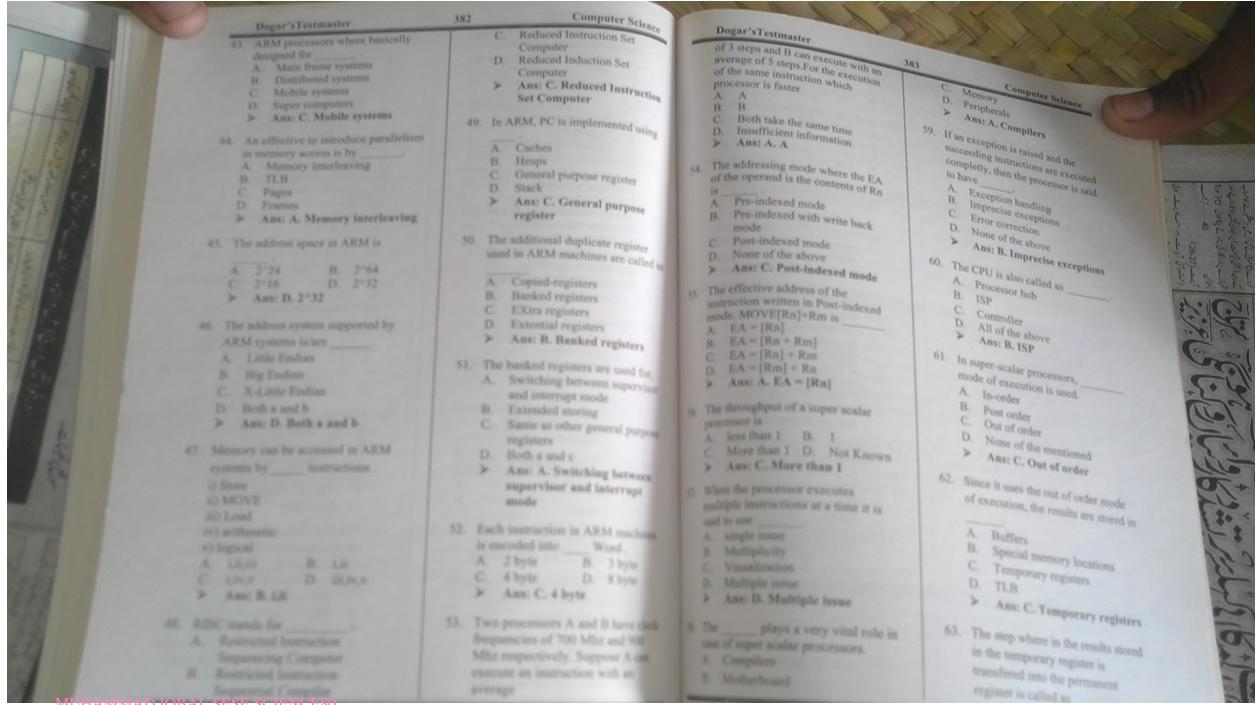
# MUHAMMAD IORAL SESE SCIENCE79 PPSC, NTS TEST MASTER

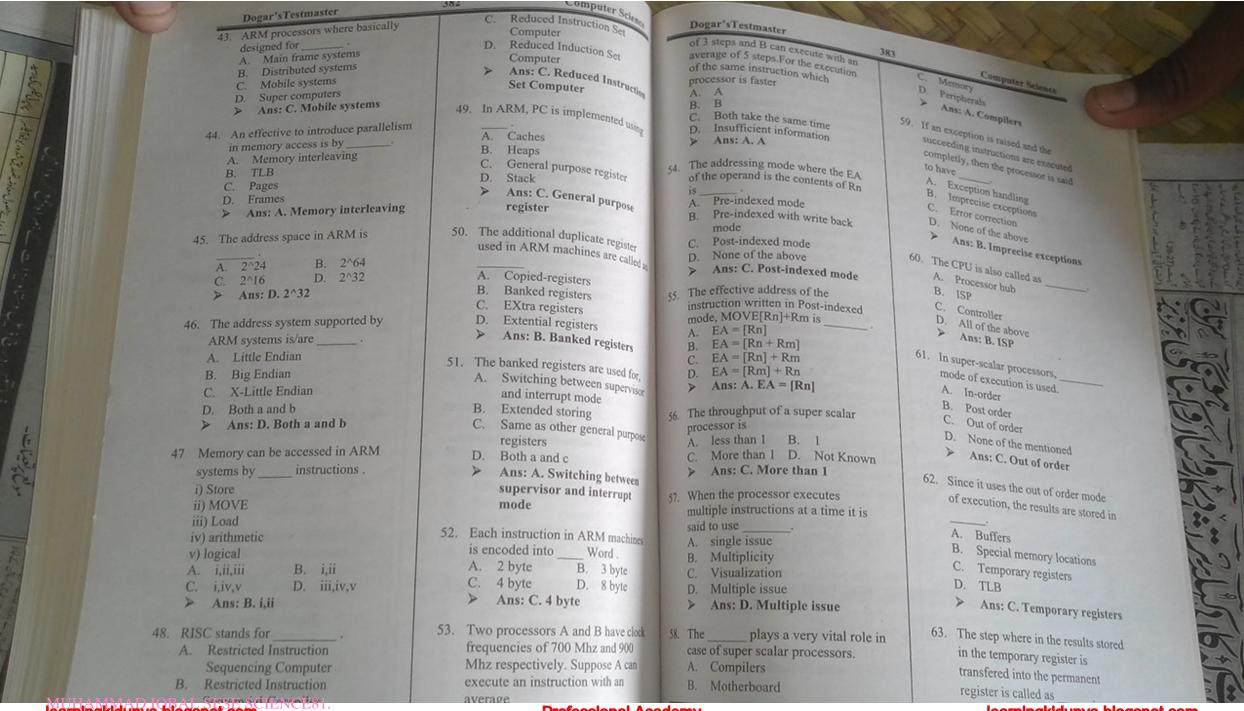
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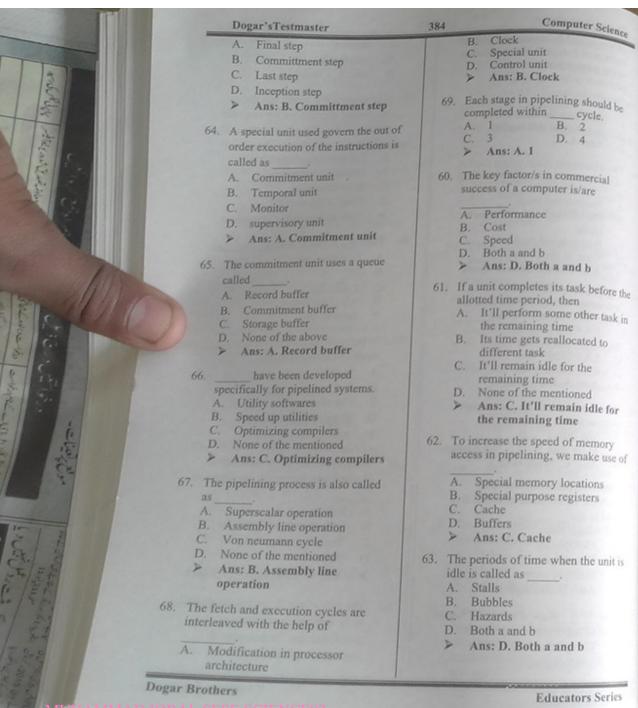


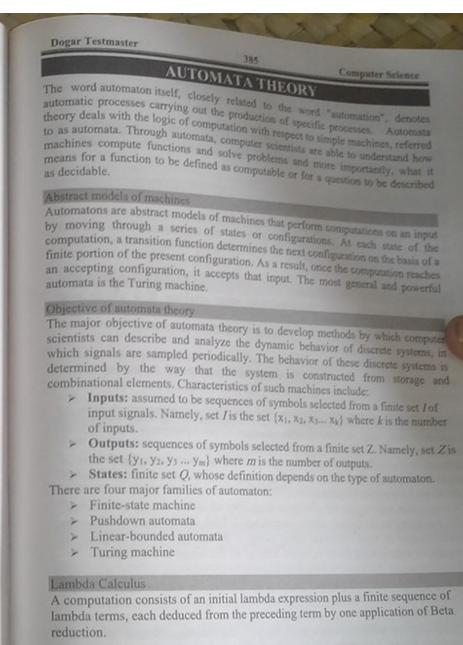
	PPSC, NTS TEST WAS	
27	The ALU and control unit of microcomputers are combined on a	
	single silicon chip, called?  A. Minichip	
	:-confocessor	
	C. ALU	
	D CU	
	> Ans: B. Microprocessor	
28	What happens when the RET	
20	instruction at the end of subroutine is	
	performed?	
	A. The information where the	
	stack is initialized is transferred to the stack counter	
	mt - manager address - C-1	
	RET instruction is transferred	
	to the counter	
	C. Two data bytes stored in the top	
	two locations of the stack are	
	transferred to the program	
	counter	
	D. Four data bytes stored in the	
	top two locations of the stack	
	are transferred to the stack	
	pointer	
	> Ans: A. The information	
	where the stack is initialized	
	is transferred to the stack	
	counter	
29	What does a micro program (is	
29	sequencer) perform the operation?	
	A. Read	
	B. Write	
	C. Execute	
	D. Read and Execute	
	> Ans: D. Read and Execute	
30	Which of the following interrupts	
-	are initiated by an I/O drive?	
	A. Internal	
	B. external	
	C. Software	
	D. None of above	
	> Ans: B. External	
	Allo: Di	

	roun stady raining
TILL DOT CAN	
31. The PCI follows a set of standards	
primarily used in PC's. 37	Provides Provides
A. Mot.	Connection to the means physical
	connection to the memory.  A. PCI BUS
> Ans: C. IBM	A. PCI BUS
	B. PCI interface
32. The is the BUS used in	
Macintosh PC s.	D. Switch circuit
A. NuBUS	Aus. C. PCI bridge
B. EISA	38. A common measure of performance
C. PCI	is measure of performance
D. None of the above	A. Principal
> Ans: A. NuBUS	A. Price/performance ratio.
	B. Performance ratio. C. Operation/price ratio.
33. The key feature of the PCI BUS is	C. Operation/price ratio. D. None of at the control of the control
A. Low cost connectivity.	
	A. Price/perferment
7 7 7	ratio.
C. Expansion of Bandwidth.	39. The man.
D. Both A. and C.	39. The master is also called asin
> Ans: B. Plug and Play	
capability.	A. Initiator B. Commander
	Ctown C
34. PCI stands for	Ans: A. Initiator
A. Peripheral Component	
Interconnect.	40. Signals whose names end in
	are asserted in the low voltage state.
B. Peripheral Computer Internet.	A. S B. #
C. Processor Computer	
Interconnect.	> Ans: B. #
D. Processor Cable Interconnect.	13. D. H
A Dowinhard	41. ARM stands for
> Ans: A. Peripherai	A. Advanced Rate Machines
Component Interconnect.	Advanced Rate Machines
	B. Advanced RISC Machines
35. The PCI BUS supports	C. Artificial Running Machines
address space/s.	D. Aviary Running Machines
A. I/O	Ans: B. Advanced RISC
A. I/O	Machines
B. Memory	oracinies
C. Configuration	42. The main importance of ARM
D. All of the above	
D All of the above	micro-processors is providing
> Ans: D. All of the above	operation with,
36. address space gives the PC	CI A. Low cost and low power
36address space gives the re	consumption -
its plug and play capability.	
A. Configuration	B. Higher degree of multi-tasking
	C. Lower error or glitches
B. I/O	D. Efficient memory management
C. Memory	
D. All of the above	> Ans: A. Low cost and low
	power consumption
> Ans: A. Configuration	
	Educators Series









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Computer Science Dogar Testmaster

Combinatory logic is a concept which has many similarities to λ-calculus, but also important differences exist. Combinatory logic was developed with great ambitions: understanding the nature of paradoxes, making foundations of mathematics more economic (conceptually), eliminating the notion of variables.

Markov algorithm a string rewriting system that uses grammar -like rules to operate on strings of symbols.

### Register machine

Register machine is a theoretically interesting idealization of a computer. There are several variants. In most of them, each register can hold a natural number, and the instructions are simple, e.g. only defragmentation and incrimination exist. The lack of the infinite external store can be understood by replacing its role with Gödel numbering techniques.

### Deterministic finite automaton (DFA)

DFA is also known as deterministic finite state machine. It is a finite state machine that accepts/rejects finite strings of symbols and only produces a unique computation (or run) of the automaton for each input string. Deterministic' refers to the uniqueness of the computation.

A DFA is defined as an abstract mathematical concept, but due to the deterministic nature of a DFA, it is implementable in hardware and software for solving various specific problems.

A software state machine that decides whether or not online user-input such as phone numbers and email addresses are valid can be modeled as a DFA.

Hardware is the digital logic circuitry that controls whether an automatic door is open or closed, using input from motion sensors or pressure pads to decide whether or not to perform a state transition.

DFAs recognize exactly the set of regular languages which are, among other things, useful for doing analysis and pattern matching. A DFA can be used in either an accepting mode to verify that an input string is indeed part of the language it represents, or a generating mode to create a list of all the strings in the language.

## Nondeterministic finite automaton (NFA)

Nondeterministic finite automaton (NFA) or nondeterministic finite state machine is finite state machine where from each state and a given input symbol the automaton may jump into several possible next states. This distinguishes it from the Deterministic Finite Automate (DFA), where the next possible state is uniquely

Dogar Testmaster

Although the DFA and NFA have distinct definitions, a NFA can be translated to equivalent DFA using power construction, i.e., the constructed DFA and the NFA recognize the same formal language. Both types of automata recognize only regular

### Regular expression

In computing, a regular expression provides a concise and flexible means for "matching" (specifying and recognizing) strings of text, such as particular characters, words, or patterns of characters. Abbreviations for "regular expression"

The concept of regular expressions was first popularized by utilities provided by Unix distributions, in particular the editor ed and the filter grep A regular expression is written in a formal language that can be interpreted by a regular expression processor, which is a program that either serves as a parser generator or examines text and identifies parts that match the provided specifications.

## Decision Properties of Regular Languages

Given a representation, e.g., RE, FA, of a regular Language L, what can we tell

- > Is the language described empty?
- > Is a particular string 'w' in the described language?
- > Do two descriptions of a language actually describe the same language? This question is often called "equivalence" of languages.

## Closure Properties for Regular Languages

### What is closure?

Recall that a set S is closed under an operation X if the output of X is in S whenever the inputs were in S. So, for example, saying that the regular languages are "closed under union" means that if P and Rare regular languages, then so is the union of P and R.

### Closure properties

Regular languages are closed under a wide variety of operations.

### Union and intersection

Pick DFAs recognizing the two languages and use the cross-product construction to build a DFA recognizing their union or intersection.

### Set complement

Pick a DFA recognizing the language, then swap the accept/non-accept markings on

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Computer Science 388 Dogar Testmaster Pick an NFA recognizing the language. Create a new final state, with epsilon transitions to it from all the old final states. Then swap the final and start states and reverse all the transition arrows. Re-write set difference using a combination of intersection and set complement Concatenation and Star Pick an NFA recognizing the language and modify it. Homomorphism A homomorphism is a function from strings to strings. What makes it a homomorphism is that its output on a multi-character string is just the concatenation of its outputs on each individual character in the string. Or, equivalently, h(xy) =h(x)h(y) for any strings x and y. If S is a set of strings, then h(S) is  $\{w : w = h(x) \text{ for } \}$ some x in S}. To show that regular languages are closed under homomorphism, choose an arbitrary regular language L and a homomorphism h. It can be represented using a regular expression R. But then h(R) is a regular expression representing h(L), So h(L) must also be regular. Context-free Language Context-free language is a language generated by some context-free grammar. The set of all context-free languages is identical to the set of languages accepted by push down automate. Context-free grammars Context-free grammars are important in linguistics for describing the structure of sentences and words in natural language and in computer science for describing the structure of programming languages and other formal languages. Parse Tree A concrete syntax tree or parse tree or parsing tree is an ordered, rooted tree that represents the syntactic structure of strings according to some formal languages. Parse trees are usually constructed according to one of two competing relations, either in terms of the constituency relation of constituency grammars or in terms of the dependency relation of dependency grammars. Parse trees are distinct from abstract syntax tree in that their structure and elements more concretely reflect the syntax of the input language. Parse trees may be generated for sentences in patural grammar, as well as during processing of

Dogar Testmaster Computer Science push down automata is a finite automate with an additional stack of symbols; its transitions can take the top symbol on the stack and depend on its value, and they

Deterministic pushdown automaton

A deterministic pushdown automaton is effectively a particular type of pushdown automata, namely one that has at most one transition for the same combination of

The term " pushdown" refers to the fact that the stack can be regarded as being "pushed down" like a tray dispenser at a cafeteria, since the operations never work

Stack Automata

A stack automata, by contrast, does allow operations on other elements, and stack automata can recognize a strictly larger set of languages than pushdown automata. Deterministic Context-free Language

A deterministic Context-free Language is a language recognized by some deterministic pushdown automaton. Not all context-free languages are

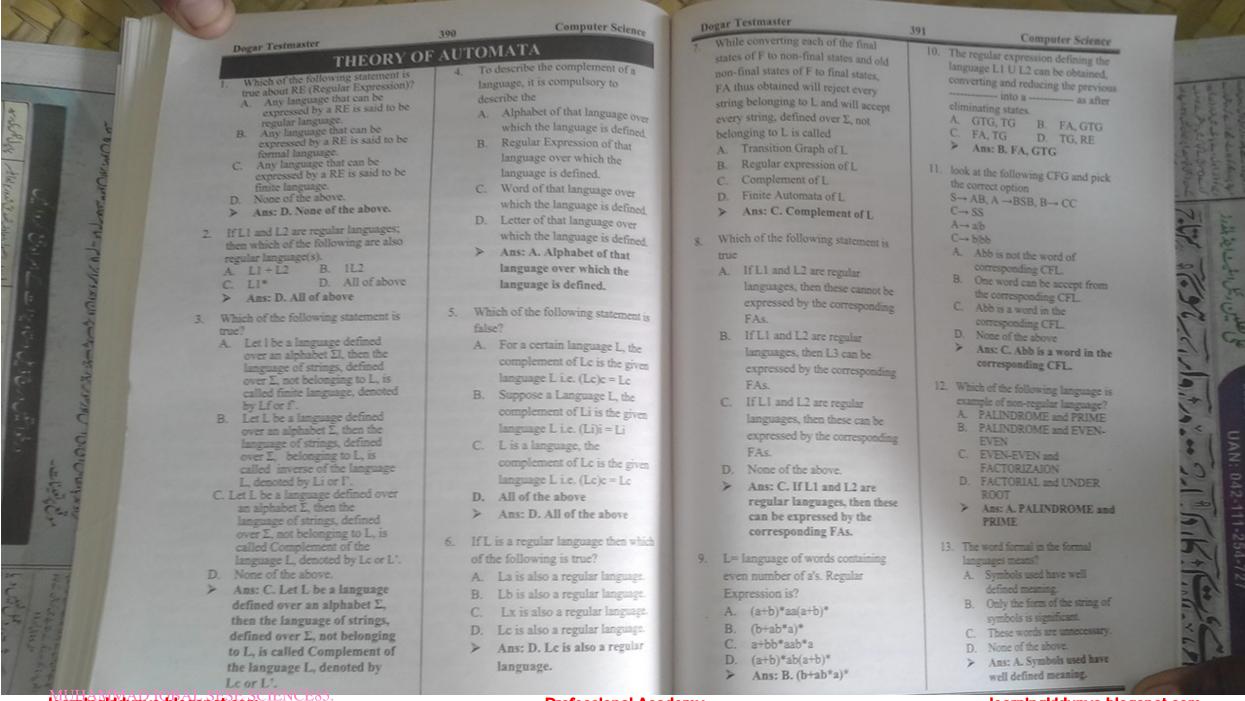
Pumping lemma for context-free languages

The pumping lemma for context-free languages, also known as the Bar-Hillel lemma, is a lemma that gives a property shared by all context-free languages.

Turing machine

A Turing machine is a device that manipulates symbols on a strip of tape according to a table of rules. Despite its simplicity, a Turing machine can be adapted to simulate the logic of any computer algorithm, and is particularly useful in explaining the functions of a CPU inside a computer.

The "Turing" machine was described by Alan Turing in 1936, who called it an "automatic machine". The Turing machine is not intended as a practical computing technology, but rather as a hypothetical device representing a computing machine. Turing machines help computer scientists understand the limits of mechanical computation.



learningkidunya biogspot.com learningkidunya biogspot.com learningkidunya biogspot.com	373-400	Tol. Which of the following statement is true about pumping lemma?  A. Languages are proved to be regular or non-regular using pumping lemma.  B. Languages are proved to be only regular using pumping lemma.  C. Languages are proved to be only non-regular using pumping lemma.  D. None of the above.  Ans: A. Languages are proved to be regular using pumping lemma.  D. None of the above.  Ans: A. Languages are proved to be regular or non-regular using pumping lemma.  15. Which of the following is infinite language?  A. EQUAL-EQUAL  B. EVEN-EVEN  C. PALINDROME  D. FACTORIAL  Ans: C. PALINDROME  16. MyhillNerode theorem is consisting of the followings,  A. L partitions Σ* into distinct classes.  B. If L is regular then, L generates finite number of classes.  C. If L generates finite number of classes then L is regular.  D. All of above  Ans: D. All of above  7. The language Q is said to be quotient of two regular languages P and R, denoted by— if PQ=R then.  A. R=Q/P  B. Q=R/P  C. Q=P/R  D. P=R/QP  Ans: B. Q=R/P	then the prefixes of Q in R denoted by  A. Pref(R in Q). B. P(R in Q). C. Pref(Q in R). D. P (Q in R).  19. Let suppose Q = {aa, abaaabb, bbaaaaaa, bbbbbbbbbbb} and R = {b, bbbb, bbbaaa, bbbaaaaaa} then which of the following option is true about Pref (Q in R) = ? A. {b,bba,bbaaa} B. {b,bbba,bbaaa} C. {ab,bba,bbbaa} D. {b,bba,bbbaa} D. {b,bba,bbba} D. {b,bba,bbbaa} D. {b,bba,bbbaa} D. {b,bba,bbbaa} D. {b,bba,bbbaa} D. {b,bba,bbbaa} D. {c. fab,bba,bbbaaa} C. {ab,bba,bbba} D. {b,bba,bbba} D. {b,bba,bbba} D. {c. fab,bba,bbbaaa} C. {ab,bba,bbba} D. {b,bba,bbba} D. {b,bba,bba} D. {b,bba} D. {b,bba} D. {b,bba} D. {b,b	C. Chomsky Normal Form D. Compared Normal Form  Ans: C. Chomsky Normal Form  25. Which of the following is true about null able production? A. A production is called null able production if it is of the form N  A.  B. A production is called null able production if it is of the form N  B. A production is called null able production if it is of the form N  B. A production is called null able production if it is of the form A  N.  D. A production is called null able production if it is of the form A  Ans: A. A production is called null able production if it is of the form A  Ans: A. A production is called null able production if it is of the form N → Λ.  26. The language which if generated by that CFG is called regular language if  A. No terminal → semi word  B. terminals → word  C. Semi word → terminal  D. None of the above  Ans: C. Semi word → terminal  D. None of the above  Ans: C. Semi word → terminal  27. S → aXb bXaX → aX bX Λ The given CFG generates the language in English  A. Beginning and ending in different letters  B. Beginning and ending in same letter  C. Even-even language  D. Odd- odd language  Ans: A. Beginning and ending in different letters	Computer Science  28. ∑ = {a,b} Productions S→XaaXX→aXX→bX X→A, this grammar defines the language that can be expressed by A. (a+b)*a(a+b) B. (a+b)*aa(a+b)* D. (a+b)*aa(a+b)* D. (a+b)*aab+bb)* ➤ Ans: C. (a+b)*aa(a+b)*  29. The grammatical rules are often called A. Semantics B. terminals' C. Productions D. Non-terminals ➤ Ans: C. Productions  30. The symbols that can't be replaced by anything are called A. Productions B. terminals' C. Terminals D. syntax ➤ Ans: B. Terminals  31. For language L defined over {a, b}, then L partitions {a, b}* into A. Infinite classes B. Finite classes C. Distinct classes D. Non-distinct classes  D. Non-distinct classes  Ans: C. Distinct classes  32. The symbols that must be replaced by other things are called A. Productions symbols B. terminals' symbols C. Non-terminals symbols C. Non-terminals symbols D. CGA symbols  D. CGA symbols  Ans: C. Non-terminals symbols	
--	---------	---	--	---	---	--

1/00/63/03W	on a path
	A. One character can be pu
	and many characters can
	popped  B. One character can be pus
2 1	and any no. of characters
50	popped
5,6	C. Any No. of characters can
6 13.	pushed and one character
= 1	be popped
7 3	D. Any No. of characters can
820 3	pushed and any no. of
6. 2	characters can be popped
21	Ans: C. Any No. of chara
1 2	can be pushed and one
313	character can be popped
ال والله ومراكز الأم - ي	34. The symbols that can't be replace
2,1	by anything are called
8- 9	A. Productions
G ;	B. terminals'
2 10	C. Non-terminals
5	D. None of the above
2017	> Ans: B. Terminals
the state	35. Grammatical rules which do not
152	involve the meaning of words are
5:	called
(B. )	A. Semantics
6	B. Syntactic
7	C. Both A and B
00	D. None of the above
5	> Ans: B. Syntactic
بالقابل آئی جی آئی اوٹھوکر نازیک چک	Alis. B. Syntactic
61	<ol> <li>Grammatical rules which involve the</li> </ol>
	meaning of words are called
	A. syntax
A	B. production
	C. Semantics
	D. All of the above
	Ans: C. Semantics
1	
	37. In pumping lemma theorem (x y^n
	z) the range of n is
	A. n=0, 1, 2, 3, 4
	B. n= 0,-2,-3,-4,-5
	C. n=1, 2, 3, 4
	-, -, -, -, -, -, -, -, -, -, -, -, -, -
	> Ans: (-)
311	
AND DES	THE RESERVE OF THE PARTY OF THE

1.10		
out	going edges from	
	START or READ	
B.	POP or REJECT	
C.	READ or POP	
D.	PUSH or POP	

shed

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n be

be

acters

can be

- 39. Which of the following is true statement?
  - A. A PDA is non-deterministic, if there are more than one REJECT states in PDA

Ans: C. READ or POP

- B. A PDA is never nondeterministic
- C. Like TG, A PDA can also be non-deterministic
- D. A PDA is non-deterministic, if there are more than one PUSH or POP states
- > Ans: C. Like TG, A PDA can also be non-deterministic
- 40. Identify the correct statement about state of FA
  - A. A problem occurs while deciding about state of FA that should be marked or not when the language Q is infinite.
  - B. No problem while deciding about state of FA that should be marked or not when the language Q is infinite.
  - C. A problem occurs while deciding about state of FA that should be marked or not when the language P is infinite.
  - D. A problem occurs while deciding about state of FA that should be marked or not when the language R is infinite.
  - Ans: A. A problem occurs while deciding about state of FA that should be marked or not when the language Q is infinite.

- A. Decision making
- B. ecision problem
- C. Decision procedure
- D. None of the above
- > Ans: C. Decision procedure
- 42. Which of the following problem can be called decidable problem(s)?
  - The two regular expressions define the different language.
  - B. The two FAs are equivalent
  - C. Both A. and B.
  - D. The two FAs are nonequivalent.
  - > Ans: B. The two FAs are equivalent.
- 43. To judge about a certain FA accepts any words, it is required to check the path from
  - A. Final to initial
  - B. Final to final
  - C. Initial to final
  - D. Initial to initial
  - > Ans: C. Initial to final
- 44. Grammatical rules which involve the meaning of words are called
  - A. Semantics
  - B. Syntax
  - C. Production words
  - D. Terminal
  - > Ans: A. Semantics
- 45. Identify the wrong statement
  - A. The language that can be expressed by any expression is called a regular language.
  - B. The language that can be expressed by any regular expression is called a Non regular language.

- expressed by any expression is called a Non regular language.
- D. The language that can be expressed by any regular expression is called a CFL
- Ans: B. The language that can be expressed by any regular expression is called a Non regular language.
- 46. a'nb'n generate the
  - A. Regular language
  - B. Finite language
  - C. Non regular languages
  - D. CFL
  - Ans: C. Non regular languages
- 47. Identify the correct statement regarding two strings x and y, defined over Σ, are run over an FA accepting the language L, then
  - A. x and y are said to belong to the different class if they end in the same state, no matter that state is final or not.
  - B. x and y are said to belong to the same class if they end in the same state, no matter that state is final or not.
  - C. x and y are said to belong to the same class if they end in the different state, no matter that state is final or not.
  - x and y are said to belong to the different class if they end in the different state.
  - Ans: B. x and y are said to belong to the same class if they end in the same state, no matter that state is final or not.

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<ul> <li>48. Identify the correct statement     A. The production of the form terminal → Λ is said to be not production.     B. The production of the form not terminal → Λ is said to be not production.     C. The production of the form not terminal → Λ is said to be reproducible production.     D. None of the above     Ans: B. The production of the form not terminal → Λ is said to be null production.</li> </ul>
<ul> <li>49. Which of the following statement is true about a production is called null able production?</li> <li>A. If it is of the form Λ → N</li> <li>B. If it is of the form N → N</li> <li>C. If it is of the form N → Λ</li> <li>D. If it is of the form Λ → Λ</li> <li>➤ Ans: C. If it is of the form N</li> </ul>
→ A  50. If L1 and L2 are regular languages then which statement is incorrect?  A. L1+L2 are always regular language  B. 1*L2 are always regular  C. (L1/L2 is always regular)  D. None of the above  Ans: C. (L1/L2 is always regular)
51. If a TG has more than one start states, the  A. Eliminate the old start state B. Initiate the new start state C. Replace the old start state with final state D. Replace the old final state with new start state  > Ans: B. Initiate the new start state

		PPSC, N
6	C	omputer Science
52. While	finding RE	corresponding to
TG, w	e connect th	e new start state.
the old	i start state b	by the transition
labeled		
	roduction str	ring
	ull string	
	ull able strin	
	one of the al	
		of the above
53. Which	of the follow	ving statement is
NOT tr	ie about TG	?
A. Th	ere may exi	st more than one
pat	hs for certai	in string.
B. The	ere may exis	st no path for
cert	tain string.	
C. The	re may be r	no final state.
D. The	re exists ex	act one path for
cert	ain string.	Facti 101
> Ans	: D. There	exists exact one
path	for certai	n string.
Kleene's t	theorem sta	
	e automate	
	erful than p	ushdown
autor		
B. All re	epresentatio	ons of a context
free 1	anguage ar	e equivalent.
C. Finite	automate	is less powerful
than r	oushdown a	utomata
	of the abov	
		10700
	C. Finite a	
		an pushdown
auton	iata.	
A language	accepted b	ov an FA is
also accepte		
A. TG on		GTG only
		All of the
above	D.	All of the
	. All of the	a abava
Alls: D	All of the	e above

55.

Dogar Testmaster		
56. If $r1 = (aa + bb)$ and $r2 = (a + b)$	397 Computer Science	7
will be generated by  A. $(r1+r2)$ B. $(r2)(r1)$ C. $(r1)^*$ D. $(r1)(r2)$	Solution Series	
> Ans: D. $(r1)(r2)$	$T = \{a, b, c\}$ $P: S \to aS$	
57. The following grammar $G = (N, T, P, S)$ $N = \{S, A, B\}$ $T = \{a, b, c\}$ $P: S \rightarrow aSa$	$A \rightarrow bB$ $B \rightarrow cC$ $C \rightarrow a$ is A. is type 3 B. Is type 2 but not type 3 C. is type 1 but not type 2 D. is	Authorized D
$S \rightarrow aAa$ $A \rightarrow bB$ $B \rightarrow bB$	type 0 but not type 1  Ans: A. is type 3	Seler But
$B \rightarrow c$ is A. is type 3	60. The following grammar $G = (N, T, P, S)$	HE I
B. Is type 2 but not type 3	$N = \{S, A, B, C, D, E\}$	
C. is type 1 but not type 2 D. None of the above	T=(a,b,c)	
> Ans: A. is type 3	$P: S \to ABCD$	
58. The following grammar $G = (N, T, P, S)$	$\begin{array}{cccc} BCD & \rightarrow & DE \\ D & \rightarrow & aD \end{array}$	
$N = \{S, A, B, C, D, E\}$	$ \begin{array}{cccc} D & \rightarrow & a \\ E & \rightarrow & bE \end{array} $	
$T = \{a, b, c\}$ $P \colon S \to aAB$	$E \rightarrow cis$	
$egin{array}{ccccc} A & &  ightarrow & CD \ B & & & \end{array}$	A. is type 3 B. Is type 2 but not type 3 C. is type 1 but not type 2 D. is type 0 but not type 1  Ans: D. is type 0 but not type 1	000 500
$egin{array}{ccc} C &  ightarrow & CE \ D & & & \end{array}$	Ans: D. is type 0 but not type 1	00,
$C \rightarrow aC$	61. Consider the following CFG S → aB S → bA	250
$C \longrightarrow b$	$B \rightarrow b$ $A \rightarrow a$	
$bE \rightarrow bc$ is	$B \rightarrow bS$ $A \rightarrow aS$	TOP
A. is type 3  B. Is type 2 but not type 3  C. is type 1 but not type 2	B → aBB A → bAA  Consider the following derivation	
D. is type 0 but not type 1	Le control del muse del conservations	

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S ⇒ aB	65. The following CFG is in	Dogar Testmaster 399
⇒ aaBB	$S \to AB \\ B \to CD$	69. Which string is accepted by the following FSA?
	$B \rightarrow AD$	
⇒ aaBb	$B \rightarrow b$	A. 00111 B. 01011 C. 01101 D. 0101
⇒ aabSb	$D \rightarrow AD$	> Ans: B. 11011
⇒ aabbAb	$D \rightarrow d$	76
TO SECURE A	$A \rightarrow a$	70. Can a DFSA simulate a NFSA
⇒ aabbab	$C \rightarrow a$	A. No
This derivation is	A. Chomsky normal form	B. Yes
A. A leftmost derivation	B. Weak Chomsky normal form	C. Sometimes
B. A rightmost derivation	C. Strong Chomsky normal fa-	D. Depends on NFA
C. Both leftmost and rightmo	D. Hone of the above	> Ans: B. Yes
derivation	Chomsky	71. Which of the following is true for an
D. Neither leftmost nor rightm	normal form	arbitrary language L?
derivation	66. The following CFG is in	A. L* L+
Ans: D. Neither leftmost no	$S \rightarrow aBB$	B. L*=L+? {?}
rightmost derivation	or $B \rightarrow bAA$	C. L*=L+
	$A \rightarrow a$	D. L* = L+? {?}
62. Consider the following language	$B \rightarrow b$	➤ Ans: B. L* = L+? {?}
$L = \{a^n b^n c^n d^n   n \ge 1\} \text{ then } L \text{ is}$	A. Chomsky normal form	
A. CFL but not regular	B. Weak Chomsky normal	72. The concept of FSA is much used in
B. CSL but not CFL	C. Strong Chomsky normal form	this part of the compiler
	D. Greibach normal form	A. Lexical analysis
C. Regular expressing		B. logical expression
- JPC o language but not type 2	form	C. Code generation
Ans: B. CSL but not CFL		D. Code optimization
63. Consider the Call	67. Which of the following CF language	> Ans: A. Lexical analysis
63. Consider the following language	is inherently ambiguous?	
$L = \{a^n b^n   n \ge 1\} \text{ then } L \text{ is}$	A. $\{a^nb^nc^md^n n, m \ge 1\}$	73. Which part of the compiler uses
A. CFL but not regular	B. $\{a \ b \ c \ a \mid n, m \ge 1\}$	concept of grammer?
B. CSL but not CFL		A. Lexical analysis
C. Regular	$\{a^n b^m c^p d^n   n = p \text{ or } m = q, n, m,$ $p, q \ge 1\}$	B. Parser
D. Type O langer		C. Code compiler
D. Type 0 language but not type 1	C. $\{d^b b^m c^p d^l   n \neq m \land p \neq q\}$	D. None of the above
Ans: A. CFL but not regular	$a b c d n \neq m \vee n \neq a$	Ans: B. Parser
64. Consider the su	Alls: B.	
64. Consider the following language $L = \{a^nb^mc^pd^q n, m\}$	$\begin{cases} a^n b^m c^p d^q   n = p \text{ or } m = q, n, m, \\ p, q > 1 \end{cases}$	74. (a + b)(cd)*(a + b) denotes the
	$p, q \ge 1$	following set
		A. $\{a(cd)^nb n\geq 1\}$ $\cup$ $\{a(bc)^nc/n\geq$
CSL DUI not CET	68. Which string is not accepted by the	13
C. Regular language	following FSA?	B Saladada Durite Miles
D. None of the above	A 00111	B. $\{a(cd)^n a   n \ge 1\} \cup \{b(cd)^n b   n \ge 1\}$
Ans: C. P.	A. 00111 B. 01010	1) U $\{b(bc)^n b/n \ge 0\}$
Ans: C. Regular language	C. 00110 D. 11010	C. $\{a(cd)^n a   n \ge 0\} \cup \{a(cd)^n b   n \ge 0\}$
	Ans: A. 00111	$0\} \cup \{b(cd)^n a/n \ge 0\} \cup$
Dogar Brothers		$\{b(cd)^nb/n\geq 0\}$
- CHICIS		D. None of the above

399	Computer S.	1 2
	Computer Science  Ans: C. $\{a(cd)^n a   n \ge 0\} \cup \{a(cd)^n b / n \ge 0\} \cup \{b(cd)^n a / n \ge 0\} \cup \{b(cd)^n b / n \ge 0\}$	See
76.	baa*c denotes the set  A. {a*b*c*c*n, m, p≥1}  B. {aab*c*n≥0}  C. {ba*c*n≥1}0  D. None of the above  Ans: C. {ba*c*n≥1}0  The set of all strings over the alphabet? = {a, b} (including?) is exressed by  A. (a+b)+(a+b)*  B. (a+b)*  C. a+b+  D. None of the above  Ans: B. (a+b)*  Palindromes can't be recognized by any FSA because  A. FSA cannot remember arbitrarily large amount of information  B. FSA cannot deterministically fix the midpoint  C. Even if the mid point is known an FSA cannot find whether the second half of the string matches the first half  D. All of the above  Ans: D. All of the above	Authorizard Osealor Bahrita Toprin  Alli Saglatti  O322 8477092, 0321 7867092, 0301 8477092  O322 8477092, 042-111-254-727

Algorithms are especially important to computers because computers are really general purpose machines for solving problems. But in order for a computer to be useful, we must give it a problem to solve and a technique for solving the problem Through the use of algorithms, we can make computers "intelligent" by programming them with various algorithms to solve problems.

An algorithm is a well-ordered collection of unambiguous and effectively computable operations that when executed produces a result and halts in a finite amount of time

## Five important characteristics of algorithms.

- 1. Algorithms are well-ordered.
- 2. Algorithms have unambiguous operations.
- 3. Algorithms have effectively computable operations.
- 4. Algorithms produce a result.
- 5. Algorithms halt in a finite amount of time.

### Algorithms are well-ordered

Since an algorithm is a collection of operations or instructions, we must know the correct order in which to execute the instructions. If the order is unclear, we may perform the wrong instruction or we may be uncertain which instruction should be performed next. A computer can only execute an algorithm if it knows the exact order of steps to perform.

## Algorithms have unambiguous operations

Each operation in an algorithm must be sufficiently clear so that it does not need to be simplified. Basic operations used for writing algorithms are known as primitive operations or primitives. When an algorithm is written in computer primitives, then the algorithm is unambiguous and the computer can execute it.

## Algorithms have effectively computable operations

Each operation in an algorithm must be doable, that is, the operation must be something that is possible to do. For computers, many mathematical operations such as division by zero or finding the square root of a negative number are also impossible. These operations are not effectively computable so they cannot be used in writing algorithms.

## Algorithms produce a result

Algorithm is a set of instructions for solving a problem. Unless an algorithm produces some result, we can never be certain whether our solution is correct. Only algorithms which produce results can be verified as either right or wrong.

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complete their execution in a finite amount of time . While our algorithm seems to be pretty clear, we have two problems. First, the algorithm must have an infinite pretty clear, pretty clear, the algorithm must have an infinite number of integers greater than one. second, the algorithm will run forever trying to count to infinity. These problems second, the age of the second to infinity. These problems yield our definition that an algorithm must halt in a finite amount of time. Every algorithm must reach some operation that tells it to stop.

Greedy algorithms are simple and straightforward. They are shortsighted in their approach in the sense that they take decisions on the basis of information at hand without worrying about the effect these decisions may have in the future. They are easy to invent, easy to implement and most of the time quite efficient. Many problems cannot be solved correctly by greedy approach. Greedy algorithms are

### Greedy Approach

Greedy Algorithm works by making the decision that seems most promising at any moment; it never reconsiders this decision, whatever situation may arise later

# Characteristics of Problems solved by Greedy Algorithms

To construct the solution in an optimal way. Algorithm maintains two sets. One contains chosen items and the other contains rejected items. The greedy algorithm consists of four (4) functions.

- 1. A function that checks whether chosen set of items provide a solution.
- 2. A function that checks the feasibility of a set
- 3. The selection function tells which of the candidates is the most promising.
- 4. An objective function, which does not appear explicitly, gives the value of a

### Huffman code

Huffman code is a technique for compressing data. Huffman's greedy algorithm looks at the occurrence of each character and it as a binary string in an optimal way.

## Kruskal's Algorithm

In kruskal's algorithm the selection function chooses edges in increasing order of length without worrying too much about their connection to previously chosen edges, except that never to form a cycle.

## Prim's Algorithm

This algorithm was first proposed by Jarnik, but typically attributed to Prim. It starts from an arbitrary vertex (root) and at each stage, add a new branch (edge) to the tree

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Computer Science Dogar's Testmaster already constructed; the algorithm halts when all the vertices in the graph have been already constructed; the algorithm that a each step the partial spanning reached. This strategy is greedy in the sense that at each step the partial spanning reached. This strategy is greedy in the smallest among all possible adjacent tree is augmented with an edge that is the smallest among all possible adjacent

## Dijkstra's Algorithm (Shortest Path)

Consider a directed graph G = (V, E).

Problem Determine the length of the shortest path from the source to each of the other nodes of the graph. This problem can be solved by a greedy algorithm often called Dijkstra's algorithm. The algorithm maintains two sets of vertices, S and C. At every stage the set S contains those vertices that have already been selected and set C contains all the other vertices. Hence we have the invariant property  $V=S \cup C$ When algorithm starts Delta contains only the source vertex and when the algorithm halts, Delta contains all the vertices of the graph and problem is solved. At each step algorithm choose the vertex in C whose distance to the source is least and add it to

## Divide-and-Conquer Algorithm

Divide-and-conquer is a top-down technique for designing algorithms that consists of dividing the problem into smaller sub problems hoping that the solutions of the sub problems are easier to find and then composing the partial solutions into the solution of the original problem.

Little more formally, divide-and-conquer paradigm consists of following major phases:

Breaking the problem into several sub-problems that are similar to the original problem but smaller in size,

Solve the sub-problem recursively (successively and independently), and then

Combine these solutions to sub problems to create a solution to the original problem.

## Dynamic Programming Algorithms

Dynamic programming is a fancy name for using divide-and-conquer technique with a table. As compared to divide-and-conquer, dynamic programming is more powerful and subtle design technique. Let me repeat, it is not a specific algorithm, but it is a meta-technique (like divide-and-conquer). Dynamic programming is a stage-wise search method suitable for optimization problems whose solutions may be viewed as the result of a sequence of decisions. The most attractive property of this strategy is that during the search for a solution it avoids full enumeration by pruning early partial decision solutions that cannot possibly lead to optimal solution.

# Dynamic Programming Advantages

Dynamic programming takes advantage of the duplication and arranges to solve each sub problem only once saying the solution (in table as

Dogar's Testmaster

place) for later use. The dynamic programming is among the most powerful for designing algorithms for optimization problem. This is true for two reasons.

firstly, dynamic programming solutions are based on few common elements. Secondly, dynamic programming problems are based on few common elements are typical optimization problems i.e., find the minimum or maximum cost solution, subject to various constraints. In other words, this technique used for optimization problems: Find a solution to the problem with the optimal value.

Then perform minimization or maximization.

# Basic elements that characterize a dynamic programming

Decompose the given problem into smaller (and hopefully simpler) sub problems. Express the solution of the original problem in terms of solutions for smaller problems. Note that unlike divide-and-conquer problems, it is not usually sufficient to consider one decomposition, but many different ones.

After solving the sub problems, store the answers (results) to the sub problems in a table. This is done because (typically) sub problem solutions are reused many times, and we do not want to repeatedly solve the same

Using table (or something), combine solutions of smaller sub problems to solve larger sub problems, and eventually arrive at a solution to the complete

# Breadth-First Search Traversal Algorithm

Breadth-first search is a way to find all the vertices reachable from the given source vertex, s. Like depth first search, BFS traverse a connected component of a given graph and defines a spanning tree. Intuitively, the basic idea of the breath-first search is this: send a wave out from source s. The wave hits all vertices 1 edge from s. From there, the wave hits all vertices 2 edges from s. Etc. We use FIFO queue Q to maintain the wave front: v is in Q if and only if wave has hit v but has

## Depth-First Search

Depth-first search is a systematic way to find all the vertices reachable from a source vertex, s. historically, depth-first was first stated formally hundreds of years ago as a method for traversing mazes. Like breadth-first search, DFS traverse a connected component of a given graph and defines a spanning tree. The basic idea of depthfirst search is this: It methodically explores every edge. We start over from different

Computer Science Dogar's Testmaster Bubble Sort is an elementary sorting algorithm. It works by repeatedly exchanging adjacent elements, if necessary. When no exchanges are required, the file is sorted If the first few objects are already sorted, an unsorted object can be inserted in the sorted set in proper place. This is called insertion sort. An algorithm considers the elements one at a time, inserting each in its suitable place among those already considered. Insertion sort is an example of an incremental algorithm; it builds the sorted sequence one number at a time. Selection Sort This type of sorting is called "Selection Sort" because it works by repeatedly element. It works as follows: first find the smallest in the array and exchange it with the element in the first position, then find the second smallest element and exchange it with the element in the second position, and continue in this way until the entire array is sorted. Shell Sort This algorithm is a simple extension of Insertion sort. Its speed comes from the fact that it exchanges elements that are far apart (the insertion sort exchanges only adjacent elements). The idea of the Shell sort is to rearrange the file to give it the property that taking every hth element (starting anywhere) yields a sorted file. Such a file is said to be h-sorted. Heap Sort The binary heap data structures are an array that can be viewed as a complete binary tree. Each node of the binary tree corresponds to an element of the array, The array is completely filled on all levels except possibly lowest. Merge Sort Merge sort is based on the divide-and-conquer paradigm. Its worst-case running time has a lower order of growth than insertion sort. Since we are dealing with sub problems, we state each sub problem as sorting a sub array A[p...r]. Initially, p=1and r = n, but these values change as we recurs through sub problems. Ouick Sort Quick sort is an algorithm of choice in many situations because it is not difficult to implement, it is a good "general purpose" sort and it consumes relatively fewer resources during execution. Good points. It is in-place since it uses only a small auxiliary stack. It requires only  $n \log (n)$  time to sort n items.

Dogar's Testmaster d Points It is recursive. Especially if recursion is not available, the implementation is It requires quadratic (i.e.,  $n^2$ ) time in the worst-case. It is fragile i.e., a simple mistake in the implementation can go unnoticed and Counting Sort The basic idea of counting sort is to determine, for each input elements x, the The basic ruca of the second for Community of the code for Community o number of electron. In the code for Counting sort, we are given array A[1...n] of length n. We required two more arrays, the array  $B[1 \dots n]$  holds the sorted output and the array c[1 ... k] provides temporary working storage. Bucket sort runs in linear time on the average. It assumes that the input is generated by a random process that distributes elements uniformly over the interval [0, 1). The idea of Bucket sort is to divide the interval [0, 1) into n equal-sized subintervals, or buckets, and then distribute the n input numbers into the buckets. Since the inputs are uniformly distributed over (0, 1), we don't expect many numbers to fall into each bucket. To produce the output, simply sort the numbers in each bucket and then go learningkidunya.blogspot.com

It has an extremely short inner loop

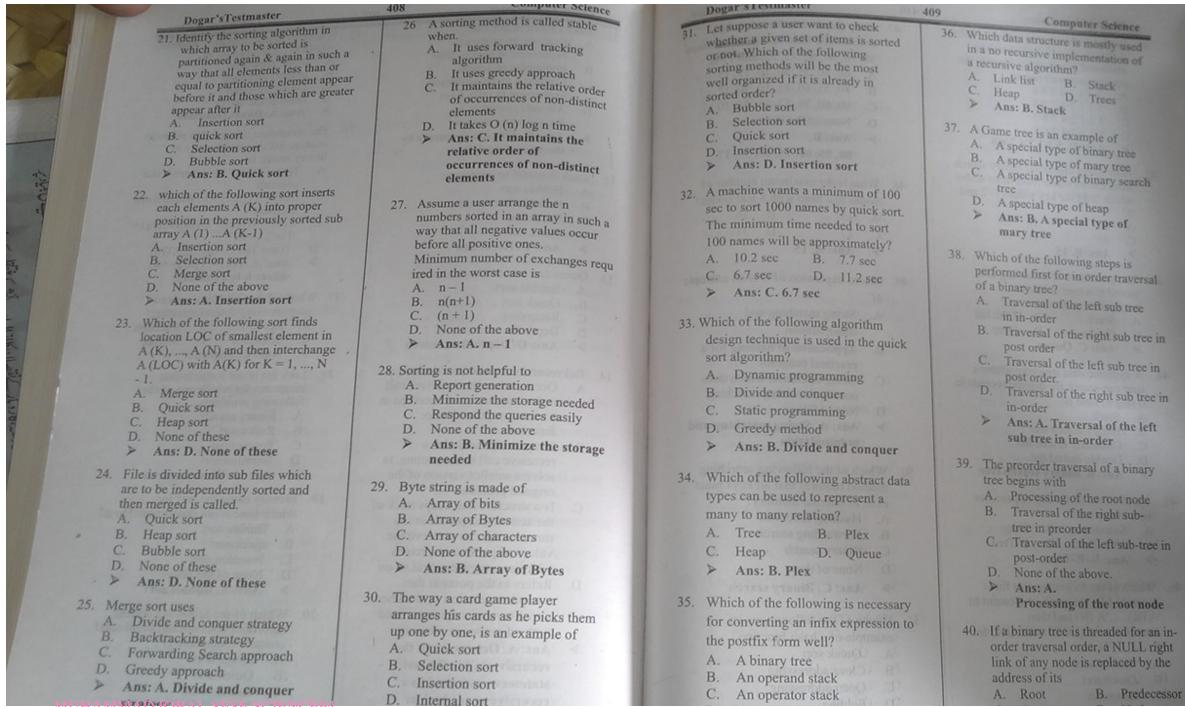
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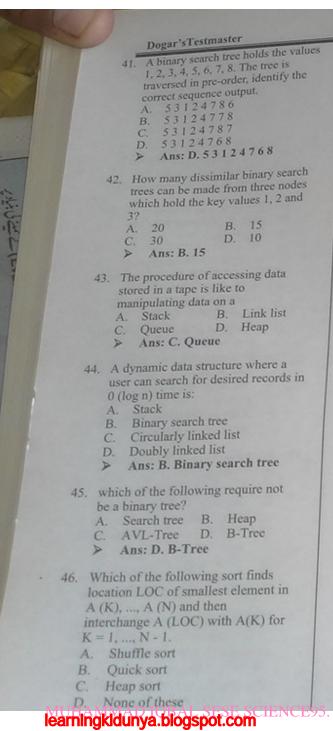
### ALGOR Memorization is best described in the following statement? A. To store previous results for future use B. To avoid this unnecessary repetitions by writing down the results of recursive calls and looking them up again if we need them later C. To make the process accurate D. None of the above Ans: B. To avoid this unnecessary repetitions by writing down the results of recursive calls and looking them up again if we need them later 2. Which of the following is best option about faster sorting algorithm A. O (n log n) B. On^2 C. O (nuke) D. On^3 Ans: C. O (nuke) Quick sort is A. Stable & in place B. Not stable but in place C. Stable but not in place D. Sometime stable & some times in place > Ans: B. Not stable but in place One example of in place but not stable algorithm is A. Merger Sort B. Merge sort C. Quick Sort D. Binary Sort Ans: C. Quick Sort 5. In Quick Sort Constants hidden in T (n log n) are A. Large B. defined by users C. Not defined Small Ans: D. Small

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A B C D	. K is sma None of Ans: C.	ents in ger than defined ill the abo K is sn	range I to range I	k
A. B. C.	rrect for stal If duplica the same sorting One array More than required Duplicatin handled	relative is use	ung algorit nents rema e position a d midrange rrays are	hm? in in after
>	Ans: A. If remain in position a	the sa	me relativ	ents ve
A. S. B. I. S. C. M. D. M. S. S. A.	n place sort uses Two dimen storage More than o storage No addition None of the torage Ans: C. No or storage	one arral arra	arrays for ay arrays by for stora arrays for	for ge
A. O( C. O(  An  Sending	(n) (nlogn) ns: A. O(n) g a copy of	B. D.	O(n+k) O(k)	
A. Pas B. Pas C. Rec	is called b ssing a value ssing param cursion ssing a refe	y ue neters		

10.

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Dogar'sTestmaster	
11. Stack cannot be used	407
11. Stack cannot be used to A. Evaluate an arithmetic expression in postfix form B. Implement recursion C. Convert a given arithmetic expression in infix form D. Allocate resources by the operating system  > Ans: D. Allocate resources by the operating system  > Ans: D. Allocate resources by the operating system  12. Stack is useful to implement A. Bubble sort B. Breadth first search C. Recursion D. Quick sort > Ans: C. Recursion  13. Queue can be used to implement A. Bubble sort B. Quick sort C. Recursion D. Depth first search > Ans: D. Depth first search  > Ans: D. Depth first search  14. Tail recursion can be best defined as A. Occurs when the recursive call is the last statement executed in a recursive procedure or function B. Is a path that includes a recursive call to the routine, to solve a smaller version of the original problem C. Is a structure that keeps track of the activation records at run time, in order to preserve the values of parameters, return addresses, registers, and so on D. Refers to the point in the compile/execution cycle when variable names are associated with addresses in memory  > Ans: A. Occurs when the recursive call is the last statement executed in a	15. Fibonacci function fib(n) = fib(n-1) + fib(n-2) is an example of A. Direct recursion B. Indirect recursion C. Limar recursion D. None of the above Ans: A. Direct recursion 16. The recurrence relation that arises in relation with the complexity of binary search is A. T(n) = T(n/2) + k, where k is a constant B. T(n) = 2T(n/2) + k, where k is a constant C. T(n) = T(n/2) + log(n)D. T(n) = T(n/2) + n17 D. T(n)=T(n/2)+log(n)D.T(n) Ans: A. T(n) = T(n/2) + k, where k is a constant 17. Which of the following is not a programming control structure? A. Repetition B. Selection C. Sequence D. Sorting Ans: C. Sequence 18. Link list is not suitable data structures for which one of the following problems A. Binary search B. Radix sort C. Polynomial D. Insertion sort  Ans: A. Binary search 19. Identify name the sort for which time is not proportional to n2 A. Bubble sort B. quick sort C. Insertion sort D. None of the above Ans: A. Bubble sort 20. Which of the following sorting algorithm does not use divide and conquer methodology? A. Merge sort B. Quick sort B. Quick sort B. Quick sort B. Quick sort





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47. H	80, 55, 60, 15, 10, 30, 17 80, 60, 36, 17, 55, 55, 10 None of the above		
48. WI	nat is the maximum number of		
no	des in a heap with 8 leaf nodes?		
A.	15 B. 16		
C.	17 D. 31		
>	Ans: A. 15		
49. Ma	cro expansion of C is an example		
Α.	String matching and		
	manipulation		
В.	Application of hashing for a		
practical program			
C. String operation which does			
n	not require string matching None of these		
D.	Ans: A. String matching and		
	manipulation		
	Control of the Contro		
meth	ch of the following searching nod requires that all keys must in internal memory?		
	Hashing functions		
	Forwarding search		
	Binary search		
	None of these		
>	Ans: C. Binary search		
	h of the following is an		
	ple of a hash function?		
A.	Quick sort		
	Close addressing		
	Open addressing		
D. I	Folding		

> Ans: D. Folding

		eLestma	ster	_		
	Dogar'	Cabaia	ad back	to la La		
52.	A. W se B. St C. D B.	of chain n addres orst case arch ope pace use eletion i est case perations	comple erations i d is less s easier complex	exity s les	of s.	h
	> A	ns: B. S	pace us	ed is	less	
53.	= key used to 98, 11 0 to 6 key II A. 3		with line the keys to a table will be the B.	37, inde	obing, 38, 72, exed fr	is 48 om
	>	Ans: C.	5			
54	A. B. C. D.	linear profactor Is far le Equals Is far gr None o Ans: A	ss than cone reater th	an o	ne	
55	of 10 reco 10.7 into reso A.	or table of records in location locatio	s. At proceedings of a control	new n a h near j B.	t there , 4, 7, record ash fu probin	are 8, 9 d g
50	rese pro is i fol pro po A.	supposolves cobing. A ndexed lowing bed if a sition 4?	ollision lassume to from 1 location collision	by q he a to 8 is wi on o	ddress Whice Il nev	s sp ch c

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57.	A hash table has space for 100 records. What is the probability of collision before the table is 10% full?  A. 0.45  B. 0.50  C. 0.30  D. 0.34  Ans: A. 0.45	1
58	A hash function randomly distributes records one by one in a space that can hold x number of records. The chance that the mth record is the first record to result in collision is  A. (x-1) (x-2)(x-(m-2))(m-1) / xm-1  B. (x-1) (x-2) (x-(m-1))(m-1) / xm-1  C. (x-1) (x-2) (x-(m-2))(m-1) / xm  D. (x-1) (x-2) (x-(m-1))(m-1) / xm  Ans: A. (x-1) (x-2)(x-(m-1))(m-1) / xm	J. W. C. C.
ng	2))(m-l) / xm-l  59. If the hashing function is the remainder on division, then clustering is more likely to occur if the storage space is divided into 40 sectors rather than 41. This result shows  A. More likely to be false B. More likely to be true C. Is always false D. None of the above  Ans: B. More likely to be true	Children 350, 250 6,1000, 1500, 250
e the	60. Recursion is equivalent to A. Greedy paradigm B. Divide and Conquer paradigm C. Both A and B. D. None of the above  ➤ Ans: B. Divide and Conquer paradigm.  61. Dynamic memory allocation use A. Calloc B. Malloc C. Free D. All of these	Sports
	> Ans: D. All of these	

	412 Computer Science	Assume that an undirected graph G	Computer Science
Dogar'sTestmaster	an an andirected up	70. se represented by an adjacency	75. A polynomial p(x) is such a
62. Dynamic memory allocation i	weighted graph G. Let a breadth first	matrix A. Let B denote the matrix A	P(1) - 4 D(2) - 0 and 25 an
used for	traversal be done starting from a	Ax A x A x A. Which of the	The minimum degree it can have is
A Dynamic allocation		following is true if an element B (i.i)	
B. Space management	node r. Let d (r, u) and d (r, v) be the	is non. Zero?	B. 2 D. 4
C. Time management	lengths of shortest paths from r to u	A. Vertex j can be reached from	> Ans: C. 3
D. Static allocation	and v respectively in G. If u is	vertex i in exactly 5 steps.	
> Ans: B. Space management	visited before v during the breadth	B. Vertex i can be reached from	76. Adjacency matrix of a diagraph is:
	first traversal, which of the	vertex j in exactly 5 steps.	a identity matrix
63. The link list implementation of		C. Vertex j cannot be reached	B. Symmetric Matrix
sparse matrices is superior to the	following statement	from vertex i.	C. Asymmetric Matrix
generalized dope vector method	is correct?	p. Vertex i cannot be reached	D. None of these
because it is	A. $d(r, v) < d(r, u)$	from vertex j.	Ans: D. None of these
A. Conceptually easier	B. $d(r, u) > d(v, r)$	> Ans: B. Vertex i can be	
B. Completely static	C. d (r, u) ≤ d (r, v)	reached from vertex j in	77. Which of the following is not true
C. Partially dynamic	The state of the s	exactly 5 steps.	for adjacency matrix of a graph?
D. Efficient if the sparse matrix is	D. None of these	exactly 5 steps.	A. It is a symmetric matrix
a band matrix	$\Rightarrow$ Ans: C. d (r, u) $\leq$ d (r, v)	71. The number of distinct simple	R It is a symmetric matrix
> Ans: A. Conceptually easier		graphs with up to 3 nodes is	B. It is a bit matrix
	67. A appropriate structure for breadth-		C. Diagonal has all zeroes
64. A dynamic data structure where a	first and depth-first traversal of	A. 15 B. 10	D. All of the above
user can search for desired records in		C. 7 D. 9	Ans: D. All of the above
0 (log n) time is:	graphs is	> Ans: A. 15	
A. Stack	A. Adjacency matrix	* . C1	78. While concatenating two strings of
B. Binary search tree	B. Edge listing	72. Let G be a graph with 100 vertices	size m and n, the resultant string will
C. Circularly linked list	C. Adjacency list	numbered 1 to 100. Two vertices i	be of size?
		and j are adjacent if $ i - j  = 8$ or $ i - j $	A. greater then m + n
D. Doubly link list	D. None of the above	j  = 12. The number of connected	B. less than m + n
Ans: B. Binary search tree	> Ans: C. Adjacency list	components in G is	
	950 00000000000000000000000000000000000	A. 8 B. 4	C. m+n*mn
65. Which of the following statements	68. In which case adjacency list	C. 12 D. 2524	D. max(m, n)
is false?	representation of graph is not useful		Ans: B. less than m + n
A. Optimal binary search tree		> Ans: A. 8	
construction can be performed	A. When number of edges is less	72 Delynomials in mamory may be	79. To locate an instance of a String of
efficiently using dynamic	than vertices	73. Polynomials in memory may be	length I, in another string of length
	B. When number of vertices is less	maintained through	
programming.	ALL DATE OF THE PROPERTY OF TH	A. Link list with header node	m, the Kunth - Morrues -
B. Breadth first search cannot be	than edges	B. Multi-dimensional array	Prattalgorithm's time is proportional
used to find component of a	C. In breadth-first traversal	C. Circularly link list	to (at worst case)
graph.		D. Array	
C. Give the prefix and postfix	D. None of the above	Ans: A. Link list with header	A. m+1 B. m-2
	Ans: C. In breadth-first		C. 1+m D. m*1
walks over 3 binary trees, the		node.	> Ans: A. m + 1
binary tree cannot be uniquely	traversal		
constructed.		74. Representing the polynomial in	90 Which of the following string
D. Depth first search can be used	69. Graph structure is available in	memory using link list requires each	80. Which of the following string
	A. College months and the second	node having	operation is not available in C?
to find connected components			A. Concatenation
of a graph.		A. Two fields	B. Pattern Matching
Ans: B. Breadth first search	C. Pascal	B. More than four fields	The state of the s
cannot be used to find	D. None of the above	C. Four fields	C. Reversing the string
	Ans: D. None of the above	D. Three fields	D. None of the above
component of a graph.	Aus. D. None of the above		> Ans: C. Reversing the string
MILITARIAN AND TODAL OFFICE COLENIOFOC		Ans: D. Three fields	

Dogar's Testmaster

Computer Science

## ARTIFICIAL INTELLIGENCE

Artificial intelligence (AI) can be define as "the study and design of intelligent agents" where an intelligent agent is a system that perceives its environment and takes actions that maximize its chances of success. Al is also defined as the science and engineering of making intelligent machines."

Artificial Intelligence (AI) is the area of computer science focusing on creating machines that can engage on behaviors that humans consider intelligent.

### Neural Networks

A neural network is an interconnected group of nodes, akin to the vast network of neurons in the human brains.

### Hierarchical temporal memory

Hierarchical temporal memory is an approach that models some of the structural and algorithmic properties of the neocortex.

### What is Intelligence?

Human behaviour can be intelligent .Mainstream thinking in psychology regards human intelligence not as a single ability or cognitive process but rather as an array of separate components.

Research in AI has focused primarily on the following mechanism of intelligence: Learning, reasoning, problem-solving, perception, and language-understanding.

### Learning

Learning is distinguished into a number of different forms. The simplest is learning by trial-and-error. For example, a simple program for solving mate-in-one chess problems might try out moves at random until one is found that achieves mate. The program remembers the successful move and next time the computer is given the same problem it is able to produce the answer straight away. The simple memorizing of individual items solutions to problems, words of vocabulary, etc. is known as rote learning.

### Generalization

Rote learning is relatively easy to implement on a computer. More challenging is the problem of implementing what is called generalization. Learning that engages generalization leaves the learner able to perform better in situations not previously encountered. Sophisticated modern techniques enable programs to generalize complex rules from data.

description is to draw inferences appropriate to the situation in hand. Inferences are eason is classified as either deductive or inductive. There has been considerable success classified a program cannot be said to reason single deductive inferences. in program, a program cannot be said to reason simply in virtue of being able to However, Reasoning involves drawing inferences that are relevant to the draw interest that are relevant to the task or situation in hand. One of the hardest problems confronting Al is that of giving computers the ability to distinguish the relevant from the irrelevant.

# problem-solving

problems have the general form: given such-and-such data, find x. A huge variety of types of problem is addressed in Al. Some examples are: finding winning moves in board games; identifying people from their photographs; and planning series of movements that enable a robot to carry out a given task.

# Problem-solving methods divide into:

## Special-purpose

A special-purpose method is tailor-made for a particular problem, and often exploits very specific features of the situation in which the problem is embedded. A general-purpose method is applicable to a wide range of different problems:

## General-purpose

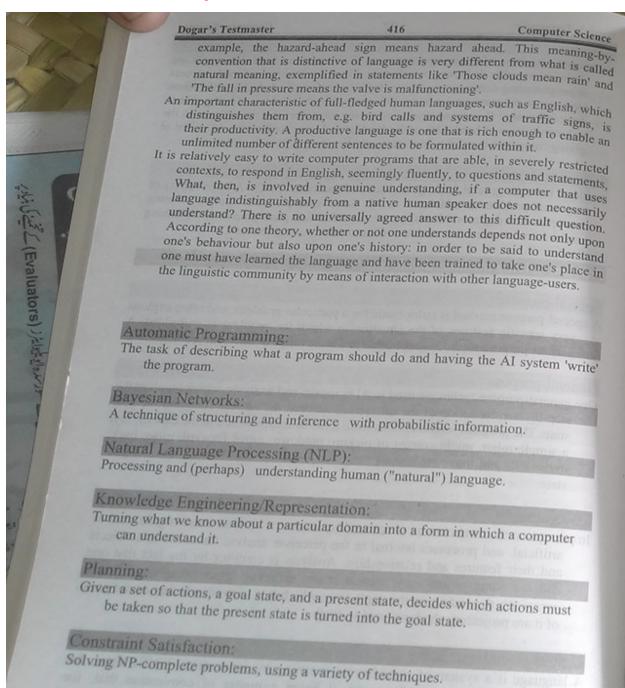
One general-purpose technique used in AI is means-end analysis, which involves the step-by-step reduction of the difference between the current state and the goal state. The program selects actions from a list of means which in the case of, say, a simple robot, might consist of pickup, putdown, move forward, move back, move left, and move right until the current state is transformed into the goal state.

### Perception

In perception the environment is scanned by means of various sense-organs, real or artificial, and processes internal to the perceiver analyse the scene into objects and their features and relationships. Analysis is complex by the fact that one and the same object may present many different appearances on different occasions, depending on the angle from which it is viewed, whether or not parts of it are projecting shadows, and so forth.

## Language-understanding

A language is a system of signs having meaning by convention. Traffic signs, for example, form a mini-language, it being a matter of convention that, for



**Your study Partner** grams that learn from experience. sual Pattern Recognition: isual Patter.

The ability to reproduce the human sense of sight on a machine. neech Recognition: Conversion of speech into text. The finding of a path from a start state to a goal state. eural Networks (NN): The study of programs that function in a manner similar to how animal brains do. For many years, AI was done as research in universities and laboratories, thus fast prototyping was favored over fast execution. This is one reason why AI has favored high-level languages such as Lisp. This tradition means that current Al Lisp programmers can draw on many resources from the community. Features of the language that are good for AI programming include: > Garbage collection > Dynamic typing Functions as data > Uniform syntax > Interactive environment > Extensibility PROLOG: This language wins 'cool idea' competition. It wasn't until the 70s that people began to become conscious that a set of logical statements plus a general theorem prover could make up a program. Prolog combines the high-level and tradition advantages of Lisp with a built-in unifier, which is particularly useful in Al. Prolog seems to be good for problems in which logic is intimately involved, or whose solutions have a succinct logical characterization. Machine Learning: A field of AI concerned with programs that learn. It includes Reinforcement Learning and Neural Networks among many other fields.

### Mini Max

An algorithm for game playing in games with perfect information.

### Modus Ponens:

An inference rule that says: if you know x and you know that 'If x is true then y is true' then you can conclude y.

### Nonlinear Planning:

A planning paradigm which does not enforce a total (linear) ordering on the components of a plan.

### Partial Order Planner:

A planner that only orders steps that need to be ordered and leaves unordered any steps that can be done in any order.

### Planning:

A field of AI concerned with systems that construct sequences of actions to achieve goals in real-world-like environments.

### Problem Space (also State Space):

The formulation of an AI problem into states and operators. There is usually a start state and a goal state. The problem space is searched to find a solution.

### Search:

The finding of a path from a start state to a goal state.

### Unification:

The process of finding a substitution (an assignment of constants and variables to variables) that makes two logical statements look the same.

he process of output that can be used to make decisions about the real world.

### orification:

The process of confirming that an implemented model works as intended.

Fuzzy expert systems are the most common use of fuzzy logic. They are used in several wide-ranging fields, including:

- > Linear and Nonlinear Control
- > Pattern Recognition
- > Financial Systems
- > Operation Research
- Data Analysis

## Logical Al

What a program knows about the world in general the facts of the specific situation in which it must act, and its goals are all represented by sentences of some mathematical logical language. The program decides what to do by inferring that certain actions are appropriate for achieving its goals.

### Search:

AI programs often examine large numbers of possibilities, e.g. moves in a chess game or inferences by a theorem proving program. Discoveries are continually made about how to do this more efficiently in various domains.

### Pattern recognition:

When a program makes observations of some kind, it is often programmed to compare what it sees with a pattern. For example, a vision program may try to match a pattern of eyes and a nose in a scene in order to find a face. More complex patterns, e.g. in a natural language text, in a chess position, or in the history of some event are also studied. These more complex patterns require quite different methods than do the simple patterns that have been studied the most.

### Representation:

Facts about the world have to be represented in some way. Usually languages of mathematical logic are used.

Computer Science

Computer Science Dogar's Testmaster 420 This is the area in which AI is farthest from human-level, in spite of the fact that it has been an active research. While there has been considerable progress, e.g. in developing systems of non-monotonic reasoning and theories of action, yet more new ideas are needed. Learning from experience: The approaches to AI based on connectionism and neural nets specialize in that, There is also learning of laws expressed in logic. Programs can only learn what facts or behaviors their formalisms can represent, and unfortunately learning systems are almost all based on very limited abilities to represent Planning: Planning programs start with general facts about the world (especially facts about the effects of actions), facts about the particular situation and a statement of a goal. From these, they generate a strategy for achieving the goal. In the most common cases, the strategy is just a sequence of actions. Epistemology: This is a study of the kinds of knowledge that are required for solving problems in the world. Ontology: Ontology is the study of the kinds of things that exist. In AI, the programs and sentences deal with various kinds of objects, and we study what these kinds are and what their basic properties are. Heuristics: A heuristic is a way of trying to discover something or an idea imbedded in a program. The term is used variously in AI. Heuristic functions are used in some

approaches to search to measure how far a node in a search tree seems to be

actic programming is a technique for getting programs to solve a task by mating coc programs and selecting fittest in millions of enerations.

421

c Programming:

enetic Programment of the central challenges of computer science is to get a computer to do what of the computer to do what needs to be done, without telling it how to do it. Genetic programming needs to the challenge by providing a method for automatically creating a addresses and computer program from a high-level problem statement of the problem.

problem programming achieves this goal of automatic programming by genetically breeding a population of computer programs using the principles of Darwinian breeding and biologically inspired operations. Genetic programming is a domain-independent method that genetically breeds a population of computer programs to solve a problem.

preparatory Steps of Genetic Programming:

The human user communicates the high-level statement of the problem to the genetic programming system by performing certain well-defined preparatory

the five major steps for the basic version of genetic programming need the human user to state:

- (1) The set of terminals for each branch of the to-be-evolved program,
- (2) The set of primitive functions for each branch of the to-be-evolved program,
- (3) The fitness measure.
- (4) Certain parameters for controlling the run.
- (5) The termination criterion and method for designating the result of the run.

Execution Steps of Genetic Programming:

Genetic programming typically starts with a population of randomly generated computer programs composed of the available programmatic ingredients. Genetic programming iteratively transforms a population of computer programs into a new generation of the population by applying analogs of naturally occurring genetic operations. These operations are applied to individual(s) selected from the population. The individuals are probabilistically selected to . . Leard on their fitness

from a goal.

**Professional Academy** Computer Science Dogar's Testmaster The execution steps of genetic are as follows: (1) Randomly create an initial population (generation 0) of individual computer programs composed of the available functions and terminals (2) Iteratively perform the following sub-steps on the population until the termination criterion is satisfied: A. Execute each program in the population and ascertain its fitness using the problem's fitness measure. B. Select one or two individual program(s) from the population with a probability based on fitness to participate in the genetic operations in C .. C. Create new individual program(s) for the population by applying the following genetic operations with specified probabilities: (i) Reproduction: Copy the selected individual program to the new population. (ii) Crossover: Create new offspring program(s) for the new population by recombining randomly chosen parts from two selected programs. (iii) Mutation: Create one new offspring program for the new population by randomly mutating a randomly chosen part of one selected program. (iv) Architecture-altering operations: Choose architecture-altering operation from the available repertoire of such operations and create one new offspring program for the new population by applying the chosen architecture-altering operation to one selected program. (3) After the termination criterion is satisfied, the single best program in the population produced during the run is harvested and designated as the result of the run. If the run is successful, the result may be a solution to the problem.

Which of the following term is used to explain the hypercritical part of problem solving? Intelligent agent base Heuristic None of the above Ans: C. Heuristic What stage of the developing process has been explained as "the Logical Intelligent agent base Heuristic None of the above Ans: C. Heuristic successive demonstration of different levels of a plan?

mapping of function onto form"? Which kind of planning consists of Hierarchical planning Non-hierarchical planning Initial planning None of the above Ans: A. Hierarchical planning

What was at first called the "simulation game" by its creator? A. Imitation game Vision control game

The Turing Test None of the above

Ans: C. The Turing Test

Decision support programe are planned to assist managers to build

A. Financial plan decision

B. Secretarial control decision

Business decisions

D. All of the above

A -- C Pucinose de isions

**Your study Partner** Mamdani's method was among the A. Control systems B. Expert systems C. Decision support systems D. Management information system Ans: A. Control systems To program a robot by physically moving it through the route you want it to follow is called A. Dynamic path control B. Static-path control C. Continuous-path control D. Pick-and-place control Ans: C. Continuous-path control To invoke the LISP system, a user must enter A. AI B. LISP C. CLSI D. None of the above Ans: B. LISP DEC advertises that it helped to create "the world's first expert system routinely used in an industrial environment," called B. RI A. PDP-11 CDP-81 D. SEGNOM Ans: B. Rl 10. Arlier to the invention of time sharing, the common method of computer access was

A. Remote login access

Batch processing

Ans: B. Batch processing

C. Single user system

D. All of the above

Comp

A. ICOT (Institute for Generation Computer Technology)

B. ISO(International for Standardization C. ITU (International Telecommunication C. SCP (Strategic Conprogram)

Ans: A. ICOT (In New Generation Technology)

26. The field that look into technicalities of human

A. Social science
B. Cognitive science
C. Human compute
D. None of the abov

Ans: B. Cogniti

27. A problem is first conplanned solution during A. Initial state
B. Formalization state
C. Connection state
D. Identification state
Ans: B. Formalization state

28. Identify name of the program which simple procedure of human A. Human logic B. Expert reason C. Expert system D. Expert solution Ans: C. Expert

 Identify name of t program that cont knowledge of an e

A. Data base m

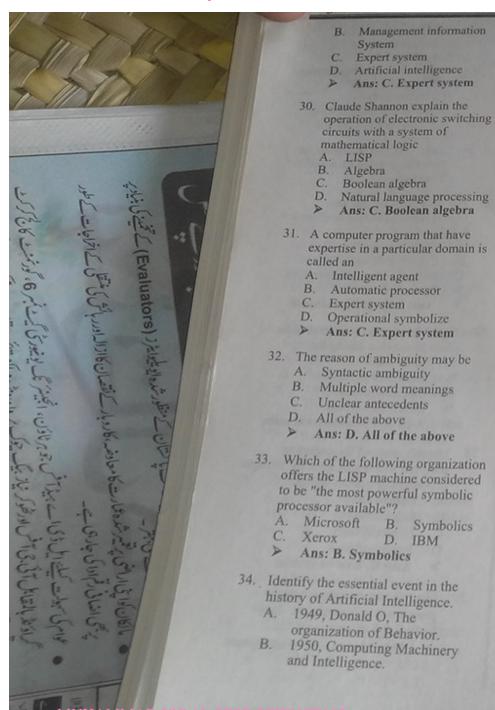
is called

### MUHAMMAD IOBAL SESE SCIENCE102 PPSC, NTS TEST MASTER

Dogar's Testmaster	424 Computer Science
11. Alain Colmerauer developed very	→ Ans: D. (+ 3 2)
first AI programming language. It was developed in A. 1970 at the University of California B. 1971 at the University of	Weak Artificial Intelligence can be defined as     A. The personification of human intellectual ability within a computer.
Manchester C. 1972 at the University of Marseilles D. 1973 at the University of Frankfurt	B. A set of computer programs which generate output that would be measured to reflect intelligence if it were generate by humans.
> Ans: C. 1972 at the University of Marseilles	C. The study of mental faculties through the use of mental models implemented on a
12. Seymour Papert of the MIT AI lab shaped a programming atmosphere for children called A BASIC B. LOGO	D. The study of the intelligent agent by which a compute r
A. BASIC B. LOGO C. MYCIN D. FORTRAN Ans: B. LOGO	display result.  > Ans: C. The study of mental faculties through the use of mental models implemented
The Strategic Computing Program is a project of the	on a computer.
A. Bell laboratory B. International Business Machine C. Defense Advance Research Project Agency D. National Science Foundation	17. In LISP, the function assigns the symbol x to y is defined as follows?  A. (setq y= x)  B. (set y = 'x')  C. (setq x = 'y')  D. (setq y 'x')
> Ans: C. Defense Advance Research Project Agency	> Ans: D. (setq y 'x')
14. The original LISP machines produced by both LMI and Symbolic were based on research performed at A. University of Bonn B. MIT C. Stanford University D. University of California  Ans: B. MIT	18. In LISP, the function returns t if <object> is a CONS cell and nil otherwise A. (cons <object>) B. (consp<object>) C. (eq<object>) D. None of the above Ans: B. (consp<object>)</object></object></object></object></object>
15. In LISP, the addition 3 + 2 is entered as  A. 3 + 2  C. 3 + 2 = D. (+ 3 2)	<ul> <li>In a rule-based system, procedural domain knowledge is in the shape of A. Production rules</li> <li>B. Inference rule</li> <li>C. Meta-rules</li> </ul>

	D. None of the above
	> Ans: A. Production rules
20.	If a robot can alter its own route in
	rejoinder to external conditions, it is considered as
	A. Intelligent robot
	B. External robot
	C. Mobile robot
	D. Static robot
	> Ans: A. Intelligent robot
21.	One of the leading American
	robotics centers is the Robotics
	Institute is located at
	A. CMU
	B. University of Hawaii
	C. University of Washington
	D. University of California
	> Ans: A. CMU
22.	In LISP, the function returns the first
	element of a list is
	A. Set B. Car
	C. First D. Second
	> Ans: B. Car
22	Nile Nileson lad a same one
40.	Nils Nilsson led a team at SRI who
	produced a mobile robot
	A. Robotics B. Turing
	C. Shakey D. Simon
	Ans: C. Shakey
24.	An AI technique that permit
	computers to understand
	associations and relationships
	hetween objects and assets in
	between objects and events is called
	A. Heuristic processing
	B. Cognitive science
	C. Relative symbolism
	D. Pattern matching
	> Ans: D. Pattern matching
25	The new organization established to
-	
	implement the Fifth Generation
	Denigot is onlind.
	Project is called:

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- C. 1956, Dartmouth University Conference Organized by John McCarthy 1961, Computer and Computer Ans: C. 1956, Dartmouth University Conference Organized by John McCarthy
- 35. Natural language processing is divided into the two categories
  - A. Symbolic and narrative Boolean algebra and decision making
  - Numerical and heuristic
  - Understanding and generation
  - Ans: D. Understanding and generation
- 36. High-resolution, bit-mapped display are helpful to show
  - A. Clearer characters
  - B. Graphics
  - C. More characters
  - D. All of the above
  - Ans: D. All of the above
- 37. A bidirectional feedback loop links computer modeling with
  - A. Artificial science
  - Heuristic processing
  - Human intelligence
  - Cognitive science
  - Ans: D. Cognitive science
- 38. Identify the abilities which human being perform better than computers?
  - A. Recognizing relative importance
  - Finding similarities
  - Resolving ambiguity
  - All of the above
  - Ans: D. All of the above