## (To be filled up by the candidate by blue/black ball-point pen)

Roll No. $\square$
Roll No.
(Write the digits in words) $\qquad$
Serial No. of Answer Sheet $\qquad$
Day and Date
(Signature of Invigilator)

## INSTRUCTIONS TO CANDIDATES

(Use only blue/black ball-point pen in the space above and on both sides of the Answer Sheet)

1. Within 10 minutes of the issue of the Question Booklet, check the Question Booklet to ensure that it contains all the pages in correct sequence and that no page/question is missing. In case of faulty Question Booklet bring it to the notice of the Superintendent/Invigilators immediately to obtain a fresh Question Booklet.
2. Do not bring any loose paper, written or blank, inside the Examination Hall except the Admit Card without its envelope.
3. A separate Answer Sheet is given. It should not be folded or mutilated. A second Answer Sheet shall not be provided. Only the Answer Sheet will be evaluated.
4. Write your Roll Number and Serial Number of the Answer Sheet by pen in the space provided above.
5. On the front page of the Answer Sheet, write by pen your Roll Number in the space provided at the top, and by darkening the circles at the bottom. Also, wherever applicable, write the Question Booklet Number and the Set Number in appropriate places.
6. No overwriting is allowed in the entries of Roll No., Question Booklet No. and Set No. (if any) on OMR sheet and Roll No. and OMR sheet No. on the Question Booklet.
7. Any changes in the aforesaid entries is to be verified by the invigilator, otherwise it will be taken as unfairmeans.
8. Each question in this Booklet is followed by four alternative answers. For each question, you are to record the correct option on the Answer Sheet by darkening the appropriate circle in the corresponding row of the Answer Sheet, by pen as mentioned in the guidelines given on the first page of the Answer Sheet.
9. For each question, darker only one circle on the Answer Sheet. If you darken more than one circle or darken a circle partially, the answer will be treated as incorrect.
10. Note that the answer once filled in ink cannot be changed. If you do not wish to attempt a question, leave all the circles in the corresponding row blank (such question will be awarded zero marks).
11. For rough work, use the inner back page of the title cover and the blank page at the end of this Booklet.
12. Deposit only the OMR Answer Sheet at the end of the Test.
13. You are not permitted to leave the Examination Hall until the end of the Test.
14. If a candidate attempts to use any form of unfair means, he/she shall be liable to such punishment as the University may determine and impose on him/her.
[उपर्युक्त निर्देश हिन्दी में अन्तिम आवरण-पूष्ठ पर दिये गये हैं।]

No. of Questions : 150

Time : 2 Hours ]
[ Full Marks : 450

Note: (1) Attempt as many questions as you can. Each question carries 3 (three) marks. One mark will be deducted for each incorrect answer. Zero mark will be awarded for each unattempted question.
(2) If more than one alternative answers seem to be approximate to the correct answer, choose the closest one.

1. Which of the following number system incorporates english Alphabets also ?
(1) Binary
(2) Hexadecimal
(3) Octal
(4) Decimal
2. RAM and ROM are :
(1) Part of primary memory
(2) Part of secondary memory
(3) Part of cache memory
(4) Part of registers
3. Logic gates are :
(1) route finder in a circuit
(2) route blockers in a circuit
(3) route destructor in a circuit
(4) route stoper in a circuit
4. The exchange of information occurs in a computer system through :
(1) Decimal codes
(2) Binary codes
(3) Hexadecimal codes
(4) Octal codes
5. Flip - Flop assumes which of the following codes ?
(1) $0 \& 1$
(2) $100 \& 110$
(3) $1000 \& 1110$
(4) $1010 \& 1100$
6. If $(111)_{2}$ in binary then $(?)_{10}$ in decimal :
(1) 4
(2) 5
(3) 6
(4) 7
P.T.O.

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7. If $(6)_{10}$ in decimal then what is in binary $(?)_{2}$ ?
(1) 110
(2) 111
(3) 101
(4) 1111
8. Basic role of Encoder is :
(1) To create codes for information
(2) To provide path to information
(3) To shortlist information
(4) To block the route of information
9. An electronic switch as elementary component of a digital circuit is best called as :
(1) Gate
(2) Logic gate
(3) Circuit
(4) Board
10. The Hexadecimal digits are 1 to 0 and A to :
(1) $E$
(2) $F$
(3) $G$
(4) $D$
11. In binary system decimal 0.875 is represented by :
(1) 0.001
(2) 0.0101
(3) 0.011
(4) 0.111
12. The commonly used character codes for transmission is/are :
(1) EBCDIC
(2) ASCII
(3) Both
(4) None of the above
13. The maximum count which a 6-bit binary word can is :
(1) 36
(2) 64
(3) 63
(4) 65
14. What is binary equivalent of decimal 269 ?
(1) 100001100
(2) 10001010
(3) 101001011
(4) 10001101
15. The Hexadecimal number A23F is represented in binary by :
(1) 1010001000111110
(2) 1010010000111111
(3) 1010001000111111
(4) 1111001100101010
16. A gate is a logic circuit with one or more input signals but :
(1) two output signals
(2) double output signals
(3) one output signals
(4) three output signals
17. In Boolean Algebra, the overbar stands for the NOT Operation and Plus sign stand for :
(1) AND operation
(2) OR operation
(3) NAND operation
(4) NOR operation
18. An AND gate has 7 inputs. How many input words are in truth table ?
(1) 64
(2) 32
(3) 16
(4) 128
19. The 2-input $X O R$ gate has high output only when the input bits are :
(1) even
(2) different
(3) low
(4) high
20. Which of the following has most widely used bipolar family?
(1) DTL
(2) TTL
(3) ECL
(4) MOS
21. A device can sink up to 16 mA and can source up to 400 mA . The device is :
(1) low power TTL
(2) high power TTL
(3) standard TTL
(4) schottky TTL
22. Digital design often starts by constructing a :
(1) standard table
(2) two stage table
(3) truth table
(4) two dimension table
23. A combinatorial logic circuit which is used to send data coming from a single source to two or more separate destinations is called :
(1) Decoder
(2) Encoder
(3) Multiplexer
(4) De-multiplexcr
24. A positive AND gate is also a negative :
(1) NAND gate
(2) NOR gate
(3) AND gate
(4) OR gate
25. A shift register can be used for :
(1) Parallel to serial conversion
(2) Serial to parallel conversion
(3) Digital delay line
(4) All of the above
26. Which of the following is first integrated logic family ?
(1) RTL
(2) DTL
(3) TTL
(4) MOS
27. Which of the following is not functionally a complete set ?
(1) AND, OR
(2) NAND
(3) NOR
(4) AND, OR, NOT
28. Which of the following Boolean Algebra rule is wrong ?
(1) $\mathrm{O}+\mathrm{A}=\mathrm{A}$
(2) $1+\mathrm{A}=1$
(3) $\mathrm{A}+\mathrm{A}=\mathrm{A}$
(4) 1. $x=1$
29. $\bar{A}+\bar{B}+\bar{C}+\bar{D}$ represents a :
(1) NAND gate
(2) OR gate
(3) EX-OR gate
(4) AND gate
30. Reduced form of Boolean expression $(A+B)(A+C)$ is :
(1) $A B+A C$
(2) $\mathrm{A}+\mathrm{B}+\mathrm{C}$
(3) $A C+B$
(4) $A+B C$
31. The most frequently used function in $C$ language is :
(1) printf ()
(2). scanf ()
(3) main ()
(4) \# include <stdio.h>
32. The function scanf () reads:
(1) single character
(2) single string
(3) all types variables
(4) only flat type variables
33. The single character input/output are:
(1) $\operatorname{scanf}()$ and printf ()
(2) getchar () and printf ()
(3) getchar () and putchar ()
(4) $\operatorname{scanf}()$ and putchar ()
34. The math library is set up for the user by file:
(1) float.h
(2) math include
(3) math.h
(4) iomath.h
35. The two operators 44 and 11 are :
(1) Arithmetic operator
(2) Equality operator
(3) Logical operator
(4) Bit-wise operators
36. The comma operator is primarily used in conjunction with :
(1) 'for' statement
(2) 'if-else'statement
(3) 'do-while' statement
(4) All of the above
37. The most common use of one-dimension array in $C$ is the :
(1) String
(2) Character
(3) Data
(4) Functions
38. In the library of standard $\mathrm{I} / \mathrm{O}$ function definition, data structure of a file is :
(1) file
(2) File
(3) FILE
(4) file*a
39. Function in a multiple program are :
(1) Automatic or register
(2) External or static
(3) Static or register
(4) Void
40. The purpose of declaring a structure is :
(1) To specify a list of structure element
(2) To define a new data type
(3) To set appropriate amount of memory
(4) All of the above
41. The Command used to list a program is :
(1) DIR
(2) LIST
(3) ENLIST
(4) ROWLIST
42. In IF statement values may be :
(1) Actual numbers
(2) Expressions
(3) Variables
(4) All of the above
43. The Oval is used in flow chart is :
(1) represent the logical beginning and end point of a program
(2) to show input/output operations
(3) to show connection
(4) to show execution
(5) P.T.O.
44. The circle is used to :
(1) represent a logical beginning of program
(2) Input/output operations
(3) Decision rule display
(4) One portion of program connection to other
45. The stepwise refinement is:
(1) Successive filteration
(2) Successive increment
(3) Fast growth
(4) Use of goto statement
46. The modular approach of program design is related to :
(1) Breaking of program into sub-programs
(2) Defining variables separately
(3) Use only one scan statement
(4) Splitting of program into functions
47. If memory has a unit which is collection of similar data-type then it called :
(1) File
(2) Pointer
(3) Register
(4) Array
48. If a variable assumes address of stored value then it is called:
(1) float
(2) static
(3) pointer
(4) array
49. Polymorphism in OOP is :
(1) Having more than one meaning
(2) Having more than one variables
(3) Having more than one libraries
(4) Having more than one class
50. Parameter passing is used in :
(1) class
(2) function
(3) input statement
(4) arrays
51. Which is the first step developing any software program?
(1) System design
(2) System study
(3) Coding
(4) Thinking
52. What is the maximum number of nodes in a tree that has N levels (when root is zero level) ?
(1) $2^{N}$
(2) $\left(2^{N+1}-1\right)$
(3) $\left(2^{N}-1\right)$
(4) $\left(2^{N}-2 N\right)$
53. How many different binary trees can be made from the three nodes that contain the key value 1,2 and 3 ?
(1) 30
(2) 20
(3) 10
(4) 5
54. A list is ordered from smallest to largest while sorting. Which of the following would take the shortest time to execute?
(1) Heap sort
(2) Bubble sort
(3) Quick sort
(4) Selection sort
55. The average number of comparisons in sequential search is:
(1) $n^{2}$
(2) $n(n-1) / 2$
(3) $n(n+1) / 2$
(4) $(n+1) / 2$
56. Which data structure is needed to convert infix notations into postfix relations ?
(1) Stack
(2) Queue
(3) Tree
(4) Graph
57. How many ancestors does a node in the Nth level (root level $=0$ ) of a binary search tree have ?
(1) N
(2) $N+1$
(3) $2^{N}$
(4) $2^{N}+1$
58. Pop and Push operations are used in :
(1) Tree
(2) Stack
(3) List
(4) Linked List
59. 'Rear' and 'front' operations are used in :
(1) Queue
(2) Tree
(3) Stack
(4) Arrays
60. Example(s) of $\mathrm{O}(\mathrm{N})$ algorithm is/are :
(1) Initializing all of the elements in a one-dimensional array to zero
(2) Incrementing all the elements in a one-dimensional array
(3) Multiplying two numbers by performing successive addition operations
(4) All of the above

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61. An example of a hierarchial data structure is :
(1) Array
(2) Link List
(3) Tree
(4) Queue
62. A file containing multiple indices to the data is called :
(1) Indexed file
(2) Sequential file
(3) Indexed-sequential file
(4) Inverted file
63. An indexed file offers the facility of a random file and the access method of a :
(1) Sequential file
(2) Indexed file
(3) Direct access file
(4) Random access file
64. Data structuring is redefined through a process called :
(1) Structuring process
(2) Hierarchical structure
(3) Normalization
(4) Relation structure
65. A file is :
(1) An abstract data type
(2) Logical storage unit
(3) It is usually non-volatile
(4) All of the above
66. How many are there methods for allocating disk ?
(1) Contiguous
(2) Linked
(3) Indexed
(4) All of these
67. System supports two types of files, which are those :
(1) text files
(2) executable binary files
(3) both (1) and (2)
(4) None of these
68. File access methods are :
(1) Sequential access
(2) Direct access
(3) Power access
(4) Both (1) and (2)
69. File access time is highest in case of :
(1) Floppy disk
(2) Cache
(3) Swapping devices
(4) Magnetic disks
70. File record length :
(1) Should always be fixed
(2) Should always be variable
(3) Depends upon the size of file
(4) Should be chosen to match the data characteristic
71. Gauss - Siedel method is used for :
(1) to find root of two equations
(2) to find square root of one equation
(3) to calculate maximum value of a function
(4) to generate coefficients of equations
72. The matrix invasion method is used in :
(1) Obtaining missing values
(2) Obtaining eigen values
(3) Solution of single equation
(4) Solution of simultaneous equations
73. Total number of starting values required in bisection method are :
(1) one
(2) two
(3) three
(4) four
74. Which of the following method is based on concept of tangent to a curve ?
(1) Jacobi method
(2) Bisection method
(3) Secant method
(4) Newton method
75. A tree with $n$ vertices has :
(1) $n-1$ edges
(2) $n$ edges
(3) $n+1$ edges
(4) $n+2$ edges
76. Spanning tree is :
(1) subset of a binary tree
(2) subset of any tree
(3) sub-graph of a tree joining all vertices
(4) sub-graph of binary tree only joining all vertices
77. A circuit is a :
(1) Loop
(2) Path
(3) Edge
(4) Directed graph
78. If a finite set $S$ has $n$ elements, then the power of set $S$ has :
(1) $2^{n+1}$
(2) $2^{n}$
(3) $2^{n-1}$
(4) $2^{n-2}$
79. If $A=\{1,2,3,4\}, B=\{2,4,6,8\}, C=\{3,4,5,6\}$, then $(A \cap B) \cap C$ is :
(1) $\{2,4\}$
(2) $\{\phi\}$
(3) $\{1,2,3,4,5,6,8\}$
(4) $\{4\}$
80. Let $A=\{-2,-1,0,1,2\}$. If the function $f: A \rightarrow R$ be defined by the formula $f(x)=\left(x^{2}+1\right)$, then range of $f$ is :
(1) $\{-2,2\}$
(2) $\{1,2,4\}$
(3) $\{0,1,4\}$
(4) $\{1,2,5\}$
81. If $A$ and $B$ are two sets then $A \cup(A \cap B)$ equals :
(1) $A$
(2) $B$
(3) $A \cup B$
(4) $A \cap B$
82. The truth table of $\sim(p \wedge q)$ is :
(1) 1110
(2) 0101
(3) 0001
(4) 1001
83. The truth table of $p \wedge(\sim q)$ is:
(1) 1110
(2) 0010
(3) 0001
(4) None of above
84. The function $f(x)=-2 x$ on $R$, the set of real number is :
(1) Injective
(2) Subjective
(3) Bijective
(4) Negative
85. How many maximum edges excluding self loop, does a simple undirected graph of eight vertices have?
(1) 7
(2) 8
(3) 28
(4) 14
86. The recurrence relation and initial condition is :
$S(k)-10 S(k)+9 S(k-2)=0$
$S(0)=3, S(1)=11$.
The solution of this :
(1) $1+2^{k}+9^{k-i}$
(2) $3+8^{k}$
(3) $2+9^{k}$
(4) $1+6^{k}$
87. Form the conjuction of $p$ and $q$ for following :
p : I am rich
Which one is correct answer ?
(1) I am rich or I am happy
(2) I am rich and I am happy
$q$ : I am happy $p: I$ am rich
(3) I am neither rich nor happy
(4) None of above
$q$ : I am happy
88. Which of the following statements is in terms of $p, q, r$ and logical connectives?

I am awake implies that I work hard
(1) $\sim r \rightarrow p$
(2) $q \rightarrow p$
(3) $r \rightarrow p$
(4) $p \rightarrow q$
89. Let $A=\{1,2,3,4\}, R=\{(1,2),(1,3),(1,4),(2,3),(2,4),(3,4)\}$. Find which type of relation it is :
(1) Reflexive
(2) Symmetric
(3) Asymmetric
(4) None of the above
90. Write recurrence formula for the sequence :

$$
2,5,8,11,14,17, \ldots \ldots
$$

(1) $a_{n}=(n+1)$
(2) $a_{n}=(n+1) / 2$
(3) $a_{n}=2+3(n-1)$
(4) $a_{n}=2+3(n-1)$
91. An operating system manages :
(1) Memory
(2) Processor
(3) Disk and I/O devices
(4) All of the above

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92. Round Robin Scheduling is essentially the preemptive version of :
(1) FIFO
(2) FCFS
(3) FILO
(4) Longest time first
93. A translator is best described as a :
(1) Application software
(2) System software
(3) Component of hardware
(4) None of the above
94. Swapping :
(1) works best with many small partitions
(2) allows many programs to use memory simultaneously
(3) allows each program in turn to use the memory
(4) does not work with overlaying
95. The initial value of the semaphore that allows only one of the many processors to enter their critical section, is :
(1) 8
(2) 1
(3) 16
(4) 0
96. Which of the following statement is not true?
(1) time sharing is an example of multiprogramming
(2) JCL is used only to communicate between system programmers
(3) a batch file contains a series of OS commands
(4) primary function of operating system is to make the computer hardware easily usable
97. Real time systems are :
(1) primarily used on mainframe computers
(2) used for monitoring events as they occur
(3) used for program analysis
(4) used for real time interactive users
98. Virtual memory is :
(1) simple to implement
(2) used in all major commercial operating systems
(3) less efficient in utilization of memory
(4) useful when fast I/O devices are not available
99. The LRU algorithm :
(1) Pages out pages that have been used recently
(2) Pages out pages that have not been used recently
(3) Pages out pages that have been least used recently
(4) Pages out the first page in a given area
100. Which of the following is characteristic of an operating sy:
(1) Resource management
(2) Error Recove
(3) Memory management
(4) All of the abo
101. Scheduling is:
(1) allowing jobs to use the processor
(2) unrelated to performance consideration
(3) not require in uniprocessor system
(4) strictly the FIFO
102. Poor response times are caused :
(1) Processor Busy
(2) High I/O rate
(3) High Paging rate
(4) All of the above

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103. The memory allocation scheme subject to "external" fragmentation is :
(1) Segmentation
(2) Swapping
(3) Pure demand paging
(4) Multiple contiguous fixed partitions
104. The meaning of throughout of an operating system is:
(1) Number of jobs entered in queue per unit time
(2) Number of jobs processed per unit time
(3) Number of jobs blocked per unit time
(4) Number of jobs waiting in system
105. Paging is :
(1) process which transfers pages and data between primary storage and direct access storage devices
(2) process which manages program pages
(3) process which manages data memory allocation
(4) process related to management of jobs
106. Which SQL command is used for permanent removal of all the rows of data from table and reduce storage space ?
(1) DROP
(2) ALTER
(3) DELETE
(4) TRUNCATE
107. Which OEM tool is used to alter initialization parameters ?
(1) Data Manager
(2) Schema Manager
(3) Storage Manager
(4) Instance Manager
108. Which of the following SQL Commands would you use to query the data ?
(1) DROP
(2) SELECT
(3) ALTER
(4) INSERT
109. Which of the following SQL. Commands is used to add up new records ?
(1) SELLECT
(2) INSERT
(3) UPDATE
(4) DELETE
110. The Management Information System (MIS) structure with one main Computer System is called a :
(1) I Iierarchical MIS structure
(2) Distributed MIS structure
(3) Centralized MIS structure
(4) Decentralized MIS structure
111. A form can be used to:
(1) modify records
(2) delete records
(3) formatted print out
(4) All of the above
112. $\Lambda$ list in alphabetical order:
(1) is in decending order
(2) is in ascending order
(3) is result of sort operation
(4) both (2) and (3)
113. Which of the following is a type of DBMS software?
(1) database manipulation language
(2) query language
(3) utilities
(4) report writer
114. Highest level in the hierarchy of data organization is called :
(1) data bank
(2) database
(3) data file
(4) data record
115. The data dictionary fells the DBMS :
(1) What files are in the database ?
(2) What attributes are procees by data?
(3) What these files contains ?
(4) All of the above

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116. Data integrity control :
(1) is used to set upper and lower limit of numeric data
(2) requires the use of passwords to prohibit unauthorized access to the file
(3) has data dictionary keep the date and time of last access, last backup and most recent modifications for files
(4) All of the above
117. Which of the following is a database administrator's function?
(1) database design
(2) backing up the database
(3) performance monitoring
(4) user coordination
118. The relational model uses some unfamiliar terminology, A type is equivalent to :
(1) Record
(2) Field
(3) File
(4) Database
119. The logical data structure with one-to-many relationship is a:
(1) Network
(2) Tree
(3) Chain
(4) Relationship
120. If a relation scheme is in $B C N F$, then it is also in :
(1) 1 NF
(2) 2 NF
(3) 3 NF
(4) None of these
121. Coaxial cable has conductors with :
(1) a common axis
(2) equal resistance
(3) same diameter
(4) None of these
122. Which data communication method is used to send data over a serial communication link ?
(1) simplex
(2) half duplex
(3) full duplex
(4) All of these
123. A protocol is a set of rules governing sequence of events that must take place :
(1) between peers
(2) accross an interface
(3) between non-peers
(4) None of these
124. How many OSI layers are covered in the $X .25$ standard ?
(1) Three
(2) Four
(3) Two
(4) Seven
125. Communication protocols always have a:
(1) set of symbols
(2) start of header
(3) special flag symbols
(4) BCC
126. $\Lambda$ router operates at:
(1) Data link layer
(2) Application layer
(3) Network layer
(4) Physical layer
127. In a Synchronous modem, the received equlizer is called :
(1) adaptive equalizer
(2) impairment equalizer
(3) statistical equalizer
(4) compromise equalizer
128. Which of the following features is possible in token passing bus network ?
(1) unlimited numbers of stations
(2) unlimited distances
(3) multiple time division
(4) in-service expansion
129. A modem is connected in between a telephone line and a:
(1) Network
(2) Computer
(3) Communication adapter
(4) Serial port
130. Which of the following TCP/IP protocol is used for transfering electronic mail messages from one machine to another ?
(1) FTP
(2) SNMP
(3) SMTP
(4) RPC
131. Which of the following items is not used in Local Area Network (LAN)?
(1) Computer
(2) Modem
(3) Printer
(4) Cable
132. Identify the odd term amongst the following group :
(1) Coaxial cable
(2) Optical fibre
(3) Twisted pair wire
(4) Microwave
133. Most data communications involving telegraph lines use :
(1) Simplex lines
(2) Wideband channels
(3) Narrowband channels
(4) Dialed service
134. Which of the following is (are) required to communicate between two Computers ?
(1) Communications software
(2) Protocol
(3) Communication hardware
(4) All of the above
135. Which of the following network access standard is used for connecting stations to a packet switched network ?
(1) X .3
(2) $X .21$
(3) $X .25$
(4) $X .75$
136. The transistorized computer circuits were introduced in the:
(1) First generation
(2) Second generation
(3) Third generation
(4) Fourth generation
137. Which is used for manufacturing chips ?
(1) Bus
(2) Control Unit
(3) Semiconductors
(4) Cables
138. Which is the alternative name for a diskette ?
(1) Floppy disk
(2) Hard disk
(3) Flexible disk
(4) Winchester disk
139. Supercomputers are primarily useful for:
(1) Input Output intensive processing
(2) Data retrieval operations
(3) Mathematical intensive scientific applications
(4) All of the above
140. Which of the following is used for input and output both ?
(1) Graph plotter
(2) Teletype terminal
(3) line printer
(4) All of the above
141. Which of the following require logic computer memory ?
(1) Imaging
(2) Graphics
(3) Voice
(4) All of the above
142. $\Lambda$ beam of light used to record and retrieve data on optical disk is known as :
(1) Polarized light
(2) unpolarized concentric light
(3) Laser
(4) Coloured light
143. The CPU chip used in a computer partially made out of :
(1) Silica
(2) Carbon
(3) Copper
(4) Silver
144. The amount of a cheque is recorded in magnetic ink, using an :
(1) Encoder
(2) Embosser
(3) Inscriber
(4) Imprinter
145. Which was the most popular first generation computer?
(1) IBM 1650
(2) IBM 360
(3) IBM 1130
(4) IBM 2700
146. Network topology consisting of nodes attached in a ring without a host computer, is known as :
(1) Star
(2) Ring
(3) Bus
(4) Tree
147. The larger the RAM of a Computer, the faster is its speed, since its eliminates:
(1) Need for external memory
(2) Need of ROM
(3) Frequent disk $1 / \mathrm{O}$
(4) Need for wider data path
148. Which of the following is a serial printer ?
(1) Diasywheel printer
(2) Chain Printer
(3) Drum Printer
(4) Line Printer
149. Which computer company introduced the printer laserjet in 198t?
(1) Mitsubishi Electronics
(2) Ashton - Tate Corporation
(3) Hewlett - Packard Inc.
(4) Nippon Electronic Corporation
150. Iirst Computer in India was manufactured by :
(1) CMC
(2) ECIL
(3) 3 EL
(4) HCL

## अभ्यर्थियों के लिए निर्देश

(इस पुस्तिका के प्रथम आवरण-पृष्ठ पर तथा उत्तर-पत्र के दोनों पृष्ठों पर केवल नीली/काली बाल-प्वाइंट पेन से ही लिखें)

1. प्रश्न पुस्तिंका मिलने के 10 मिनट के अन्दर ही देख ले कि प्रश्नपत्र में सभी पृष्ठ मौजूद है और कोई प्रश्न छूटा नहीं है। पुस्तिका दोषयुक्त पाये जाने पर इसकी सूचना तत्काल कक्ष निरीक्षक को देकर सम्पूर्ण प्रश्नपत्र की दूसरी पुस्तिका प्राप्त कर लें।
2. परीक्षा भवन में लिफाफा रहित प्रवेश-पत्र को अतिरिक्त, लिखा या सादा कोई भी खुला कागज साथ में न लायें।
3. उत्तर-पत्र अलग सें दिया गया है। इसे न तो मोड़ें और न ही विकृत करें। दूसरा उत्तर-पत्र नहीं दिया जायेगा। केवल उत्तर-पत्र का ही मूल्यांकन किया जायेगा।
4. अपना अनुक्रमांक तथा उत्तर-पत्र का क्रमांक प्रथम आवरण-पृष्ठ पर पेन से निर्धारित स्थान पर लिखें।
5. उत्तर-पत्र के प्रथम पृष्ठ पर पेन से अपना अनुक्रमांक निर्धारित स्थान पर लिखें तथा नीचे दिये वृत्तों को गाढ़ा कर दें। जहाँ-जहाँ आवश्यक हो वहाँ प्रश्न-पुस्तिका का क्रमांक तथा सेट का नम्बर उचित स्थानों पर लिखें।
6. ओ० एम० आर० पत्र पर अनुक्रमांक संख्या; प्रश्न-पुस्तिका संख्या व सेट संख्या (यदि कोई हो) तथा प्रश्न-पुस्तिका पर अनुक्रमांक संख्या और ओ० एम० आर० पत्र संख्या की प्रविष्टियों में उपरिलेखन की अनुमति नहीं है।
7. उपर्युक्त प्रविष्टियों में कोई भी परिवर्तन कक्ष निरीक्षक द्वारा प्रमाणित होना चाहिये अन्यथा यह एक अनुचित साधन का प्रयोग माना जायेगा।
8. प्रश्न-पुस्तिका में प्रत्येक प्रश्न के चार वैकल्पिक उत्तर दिये गये हैं। प्रत्येक प्रश्न के वैकल्पिक उत्तर के लिये आपको उत्तर-पत्र की सम्बन्धित पंक्ति के सामने दिये गये वृत्त को उत्तर-पत्र के प्रथम पृष्ठ पर दिये गये निर्देशों के अनुसार पेन से गाढ़ा करना है।
9. प्रत्येक प्रश्न के उत्तर के लिये केवल एक ही वृत्त को गाढ़ा करें। एक से अधिक वृत्तों को गाढ़ा करने पर अथवा एक वृत्त को अपूर्ण भरने पर वह उत्तर गलत माना जायेगा।
10. ध्यान दें कि एक बार स्याही द्वारा अंकित उत्तर बदला नहीं जा सकता है। यदि आप किसी प्रश्न का उत्तर नहीं देना चाहते हैं, तो सम्बन्धित पंक्ति के सामने दिये गये सभी वृत्तों को खाली छोड़ दें। ऐसे प्रश्नों पर शून्य अंक दिये जायेंगे।
11. रफ कार्य के लिये इस पुस्तिका के मुखपृष्ठ के अंदर वाला पृष्ठ तथा अंतिम खाली पृष्ठ का प्रयोग करें।
12. परीक्षा के उपरान्त केवल ओ० एम० आर० उत्तर-पत्र ही परीक्षा भवन में जमा करें।
13. परीक्षा समाप्त होने से पहले परीक्षा भवन से बाहर जाने की अनुमति नहीं होगी।
14. यदि कोई अभ्यर्थी परीक्षा में अनुचित साधनों का प्रयोग करता है, तो वह विश्वविद्यालय द्वारा निर्धारित दंड का/की भागी होगा/होगी।
