

SECTION-B

[Only for candidates appearing in QURAT July'19 -DEPARTMENT OF C.S.E]

51. A collection of card is called a
- Graphic row
 - Deck
 - CRT
 - Reader codes
52. The data and instructions are in _____ form inside the computer the result will be printed only in _____ system
- Decimal, Decimal
 - Binary, Binary
 - Binary, Decimal
 - Decimal, Binary
53. Which of these is not an advantage of Optical fibers
- easy installation and maintenance
 - Immune to electromagnetic interference
 - Less signal attenuation
 - greater immunity to tapping
54. Which of these multiplexing techniques is digital for combining several low -rate channels into one high-rate one
- FDM
 - WDM
 - TDM
 - None of the above
55. Let $m=(313)_4$ and $n=(322)_4$. Find the base 4 expansion of $m+n$.
- $(635)_4$
 - $(32312)_4$
 - $(21323)_4$
 - $(1301)_4$
56. The Boolean function with the Karnaugh map

	AB			
CD	00	01	11	10
00	0	1	1	0
01	0	1	1	1
11	1	1	1	1
10	0	1	1	0

- $(A+C).D+B$
 - $(A+B).C+D$
 - $(A+D).C+B$
 - $(A+C).B+D$
57. 'ptrdata' is a pointer to a data type. The expression *ptrdata++ is evaluated as (in C++) :
- *ptrdata++
 - (*ptrdata)++
 - *ptrdata++
 - Depends on compiler

58. The associativity of which of the following operators is Left to Right, in C++ ?
- Unary Operator
 - Logical not
 - Array element access
 - Address of
59. A member function can always access the data in _____, (in C++).
- the class of which it is member
 - the object of which it is a member
 - the public part of its class
 - the private part of its class
60. Which of the following is not correct for virtual function in C++ ?
- Must be declared in public section of class.
 - Virtual function can be static.
 - Virtual function should be accessed using pointers.
 - Virtual function is defined in base class
61. In RDBMS, different classes of relations are created using _____ technique to prevent modification anomalies.
- Functional Dependencies
 - Data integrity
 - Referential integrity
 - Normal Forms
62. _____ SQL command changes one or more fields in a record.
- LOOK-UP
 - INSERT
 - MODIFY
 - CHANGE
63. Consider an array representation of an n element binary heap where the elements are stored from index 1 to index n of the array. For the element stored at index i of the array ($i \leq n$), the index of the parent is:
- $\text{floor}((i+1)/2)$
 - $\text{ceiling}((i+1)/2)$
 - $\text{floor}(i/2)$
 - $\text{ceiling}(i/2)$
64. The following numbers are inserted into an empty binary search tree in the given order: 10, 1, 3, 5, 15, 12, 16 What is the height of the binary search tree ?
- 3
 - 4
 - 5
 - 6
65. For the 8 - bit word 00111001, the check bits stored with it would be 0111. Suppose when the word is read from memory, the check bits are

calculated to be 1101. What is the data word that was read from memory?

- a. 10011001
- b. 00011001
- c. 00111000
- d. 11000110

66. Consider a 32 - bit microprocessor, with a 16 - bit external data bus, driven by an 8 MHz input clock. Assume that this microprocessor has a bus cycle whose minimum duration equals four input clock cycles. What is the maximum data transfer rate for this microprocessor?

- a. 8 x 106 bytes/sec
- b. 4 x 106 bytes/sec
- c. 16 x 106 bytes/sec
- d. 4 x 109 bytes/sec

67. The equivalent hexadecimal notation for octal number 2550276 is:

- a. FADED
- b. AEOBE
- c. ADOBE
- d. ACABE

68. Select the 'False' statement from the following statements about Normal Forms:

- a. Lossless preserving decomposition into 3NF is always possible
- b. Lossless preserving decomposition into BCNF is always possible
- c. Any Relation with two attributes is in BCNF
- d. BCNF is stronger than 3NF

69. The clausal form of the disjunctive normal form $\neg A \vee \neg B \vee \neg C \vee D$ is:

- a. $A \wedge B \wedge C \Rightarrow D$
- b. $A \vee B \vee C \vee D \Rightarrow \text{true}$
- c. $A \wedge B \wedge C \wedge D \Rightarrow \text{true}$
- d. $A \wedge B \wedge C \wedge D \Rightarrow \text{false}$

70. Which of the following is false for the programming language PROLOG?

- a. A PROLOG variable can only be assigned to a value once
- b. PROLOG is a strongly typed language
- c. The scope of a variable in PROLOG is a single clause or rule
- d. The scope of a variable in PROLOG is a single query

71. Which one of the following is true?

- a. The resolvent of two Horn clauses is not a Horn clause
- b. The resolvent of two Horn clauses is a Horn clause
- c. If we resolve a negated goal G against a fact or rule A to get clause C then C has positive literal or non-null goal

- d. If we resolve a negated goal G against a fact or rule A to get clause C then C has positive literal or null goal

72. Which transmission technique guarantees that data packets will be received by the receiver in the same order in which they were sent by the sender?

- a. Broadcasting
- b. Unicasting
- c. Packet switching
- d. Circuit switching

73. Which of the following control fields in TCP header is used to specify whether the sender has no more data to transmit?

- a. FIN
- b. RST
- c. SYN
- d. PSH

74. Which are the two modes of IP security?

- a. Transport and certificate
- b. Transport and tunnel
- c. Certificate and tunnel
- d. Preshared and transport

75. The maximum payload of a TCP segment is:

- a. 65,535
- b. 65,515
- c. 65,495
- d. 65,475

76. Consider the following statements: (a) Depth - first search is used to traverse a rooted tree. (b) Pre - order, Post-order and in order are used to list the vertices of an ordered rooted tree. (c) Huffman's algorithm is used to find an optimal binary tree with given weights. (d) Topological sorting provides a labelling such that the parents have larger labels than their children. Which of the above statements are true?

- a. and (b)
- b. and (d)
- c. (a), (b) and (c)
- d. (a), (b), (c) and (d)

77. In which testing strategy requirements established during requirements analysis are validated against developed software?

- a. Validation testing
- b. Integration testing
- c. Regression testing
- d. System testing

78. Cohesion is an extension of:

- a. Abstraction concept
- b. Refinement concept
- c. Information hiding concept
- d. Modularity

79. Which of the following algorithms sort n integers, having the range 0 to (n2 - 1), in ascending order in O(n) time ?

- a. Selection sort
- b. Bubble sort
- c. Radix sort
- d. Insertion sort

80. match the following database terms to their function:

List - I	List - II
(a) Normalization	(i) Enforces match of primary key to foreign ke
(b) Data Dictionary	(ii) Reduces data redundancy in a database
(c) Referential Integrity	(iii) Defines view(s) of the database for particul
(d) External Schema	(iv) Contains metadata describing database stru

Codes :

	(a)	(b)	(c)	(d)
(1)	(iv)	(iii)	(i)	(ii)
(2)	(iii)	(iv)	(i)	(iii)
(3)	(iii)	(iv)	(iii)	(i)
(4)	(iv)	(iii)	(ii)	(i)

- a. (1)
- b. (2)
- c. (3)
- d. (4)

81. In general, in a recursive and non-recursive implementation of a problem (program) :

- a. Both time and space complexities are better in recursive than in non-recursive program.
- b. Both time and space complexities are better in non-recursive than in recursive program
- c. Time complexity is better in recursive version but space complexity is better in non-recursive version of the program.
- d. Space complexity is better in recursive version but time complexity is better in non-recursive version of the program

82. How many different equivalence relations with exactly three different equivalence classes are there on a set with five elements?

- a. 10
- b. 15
- c. 25
- d. 30

83. The simplified form of a Boolean equation $(AB' + AB'C + AC)(A'C' + B')$ is :

- a. AB'
- b. $AB'C$
- c. $A'B$
- d. ABC

84. In a positive-edge-triggered JK flip-flop, if J and K both are high then the output will be _____ on the rising edge of the clock.

- a. No change
- b. Set
- c. Reset
- d. Toggle

85. Which of the following addressing mode is best suited to access elements of an array of contiguous memory locations ?

- a. Indexed addressing mode
- b. Base Register addressing mode
- c. Relative address mode
- d. Displacement mode

86. If every non-key attribute is functionally dependent on the primary key, then the relation is in _____ .

- a. First normal form
- b. Second normal form
- c. Third normal form
- d. Fourth normal form

87. Pumping lemma for regular language is generally used for proving:

- a. whether two given regular expressions are equivalent
- b. a given grammar is ambiguous
- c. a given grammar is regular
- d. a given grammar is not regular

88. Which of the following problems is undecidable?

- a. To determine if two finite automata are equivalent
- b. Membership problem for context free grammar
- c. Finiteness problem for finite automata
- d. Ambiguity problem for context free grammar

89. Finite state machine can recognize language generated by _____.

- a. Only context free grammar
- b. Only context sensitive grammar
- c. Only regular grammar
- d. any unambiguous grammar

90. Quadrature Amplitude Modulation means changing both:

- a. Frequency and phase of the carrier.
- b. Frequency and Amplitude of the carrier.
- c. Amplitude and phase of the carrier.
- d. Amplitude and Wavelength of the carrier.

91. If a file consisting of 50,000 characters takes 40 seconds to send, then the data rate is _____.

- a. kbps
- b. 2.1.25 kbps
- c. 3.2 kbps
- d. 4.10 kbps

92. The address of a class B host is to be split into subnets with a 6 - bit subnet number. What is the maximum number of subnets and maximum number of hosts in each subnet?

- a. 62 subnets and 1022 hosts
- b. 64 subnets and 1024 hosts
- c. 62 subnets and 254 hosts

d. 64 subnets and 256 hosts
93. Which of the following statements are true ? (a) The fragmentation fields in the base header section of IPv4 have moved to the fragmentation extension header in IPv6. (b) The authentication extension header is new in IPv6. (c) The record route option is not implemented in IPv6.

- a. and (b) Only
- b. and (c) Only
- c. and (c) Only
- d. (a), (b) and (c)

94. _____ is subject oriented, integrated, time variant, nonvolatile collection of data in support of management decisions.

- a. Data mining
- b. Web mining
- c. Data warehouse
- d. Database Management System

95. In Data mining, classification rules are extracted from _____.

- a. Data
- b. Information
- c. Decision Tree
- d. Database

96. Discovery of cross sales opportunities is called as _____.

- a. Association
- b. Visualization
- c. Correlation
- d. Segmentation

97. In Data mining, _____ is a method of incremental conceptual clustering.

- a. STRING
- b. COBWEB
- c. CORBA
- d. OLAD

98. Consider an implementation of unsorted single linked list. Suppose it has its representation with a head and a tail pointer (i.e. pointers to the first and last nodes of the linked list). Given the representation, which of the following operation can not be implemented in $O(1)$ time ?

- a. Insertion at the front of the linked list.
- b. Insertion at the end of the linked list.
- c. Deletion of the front node of the linked list.
- d. Deletion of the last node of the linked list.

99. Consider the following statements: S1: A queue can be implemented using two stacks. S2: A stack can be implemented using two queues. Which of the following is correct?

- a. S1 is correct and S2 is not correct.
- b. S1 is not correct and S2 is correct.
- c. Both S1 and S2 are correct.
- d. Both S1 and S2 are incorrect.

100. Which of the following protocols is used by email server to maintain a central repository that can be accessed from any machine ?

- a. POP3
- b. IMAP
- c. SMTP
- d. DMSP

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