

## BACHELOR IN COMPUTER APPLICATION

- Which of the following correctly indicates the essential infrastructures for carrying the B2B e-commerce ?
  - World Wide Web
  - Corporate network
  - EDI standard
  - Secure Payment Service
  - Secure electronic communication

(a) (i), (ii), (iii)   (b) (ii), (iii), (iv)   (c) (ii), (iii), (iv), (v)   (d) All of the above
- Which out of following uses secure electronic transaction protocol ?
  - Credit card payment
  - Cheque payment
  - Electronic cash payment
  - Payment of small amount for internet services
- Which out of the following is most suitable for firewall implementation ?
  - Router which connects intranet to internet
  - Bridge used in internet
  - Expensive modem
  - User application program
- Which of the following statement is most appropriate for B2C commerce ?
  - It includes services like legal advice.
  - It is limited to shopping of physical goods only.
  - Customer should approach customer for selling only.
  - Customer should approach business to buy.
- What could be an implication for an organization if e-business strategy is not clearly defined ?
  - Greater opportunity from evaluation of opportunity.
  - Effective integration of e-business at technical level.
  - Increase in profit.
  - None of the above
- Which of the following technique is used to find the biconnected components of the graph ?
  - Greedy method
  - Dynamic programming
  - Divide and conquer
  - Depth first search
- Which of the following problems can be solved efficiently by greedy technique ?
  - Travelling Salesman Problem
  - Minimum Spanning Tree
  - Matrix Multiplication
  - None of the above
- The number of edges in an undirected complete graph with five (5) vertices is
  - 5
  - 10
  - 20
  - 15
- The complexity of Strassen's matrix multiplication is
  - $O(n^2)$
  - $O(n^3)$
  - $O(n^{2.81})$
  - $O(n^5)$

10. A sorting technique is said to be stable if it
- takes  $O(n^2)$  time
  - uses back tracking
  - maintains relative order of occurrence for non-distinct elements
  - takes  $O(n)$  space
11. There are four algorithms A1, A2, A3, A4 with complexity orders  $\log(n)$ ,  $\log(\log n)$ ,  $n \log(n)$  and  $n/\log(n)$  respectively. Which of these algorithms is best ?
- A1
  - A2
  - A3
  - A4
12. The worst case complexity of quick sort is \_\_\_\_\_.
- $O(n^2)$
  - $O(n)$
  - $O(n \log n)$
  - $O(n^3)$
13. Which of the following is contained in program counter ?
- Address of next instruction
  - Address of current instruction
  - Address of stack pointer
  - Count of executed instructions
14. Which out of the following scheduling policy is most suitable for a time shared operating system ?
- Shortest Job First
  - Elevator
  - Round Robin
  - FCFS
15. Which of the following scheduling algorithm is non-preemptive ?
- Round Robin
  - FCFS
  - Multilevel Queue Scheduling
  - Multilevel Queue Scheduling with Feedback
16. Fence register is used for \_\_\_\_\_.
- CPU protection
  - Memory protection
  - File protection
  - None of the above
17. The time interval between the time of submission and completion of the job is termed as
- waiting time
  - through put time
  - turn around time
  - response time
18. Which of the following is a filter command of UNIX ?
- ls-l
  - grep
  - dir
  - None of the above
19. A graph with all vertices having equal degree is termed as
- Multi-graph
  - Regular graph
  - Simple graph
  - Complete graph

20. If a connected planar graph  $G$  is having 6 vertices and 7 edges, then how many regions are in  $G$  ?  
 (a) 15 (b) 11 (c) 1 (d) 3
21. If in a binary tree  $T$  there are  $n$  leaf nodes then the number of nodes of degree 2 in  $T$  will be  
 (a)  $n$  (b)  $n - 1$  (c)  $\log_2 n$  (d)  $2^n$
22. A graph which is connected and acyclic is termed as  
 (a) Cyclic graph (b) Regular Graph (c) Tree (d) None of the above
23. Which among the following is a \_\_\_\_\_ service provided by cloud computing ?  
 (a) Platform (b) Software (c) Infrastructure (d) All of the above
24. Which of the following is not a type of hardware cloud virtualization ?  
 (a) Full virtualization (b) Service virtualization  
 (c) Para virtualization (d) Emulation virtualization
25. Which of the following is a distributed cloud type ?  
 (a) Volunteer cloud (b) Private cloud  
 (c) Community cloud (d) Hybrid cloud
26. Which of the following statement is true about cloud ?  
 (a) The virtual cluster node can be physical machine or virtual machine.  
 (b) A virtual machine runs on guest operating system.  
 (c) Virtual machines can be replicated in multiple servers.  
 (d) All of the above
27. Which of the following cloud service provides the necessary software support ?  
 (a) SaaS (b) PaaS (c) IaaS (d) None of the above
28. Which of the following SQL statements can be used to remove data from table "users" ?  
 (a) REMOVE TABLE users (b) DROP TABLE users  
 (c) DELETE TABLE users (d) ALTER TABLE users
29. Which one is true about relational database ?  
 (a) A column can store values of different data types.  
 (b) A table consists of rows and columns.  
 (c) Different rows in the same table can have different set of columns.  
 (d) Rows are also known as fields of the table.

30. Which one is false about keys in the relational model ?
- (a) Primary keys are defined by a subset of attributes of a relation.
  - (b) Primary keys uniquely identify each tuple of the relation.
  - (c) Primary keys define the relation between two tables.
  - (d) A relation can have multiple foreign keys.
31. Which of the following is true about columns ?
- (a) Each columns consists of one or more records.
  - (b) Columns are where the individual pieces of information are stored for each record.
  - (c) Columns must be designated by a specific data type.
  - (d) Columns is also known as record.
32. Which one of the following is optional and need not to be specified at table creation time ?
- (a) Table name
  - (b) Column name
  - (c) Default constraint
  - (d) Column Data type
33. Which of the following cannot be used to restrict specific values from being inserted into a column in particular table ?
- (a) Index
  - (b) Check constraint
  - (c) Referential constraint
  - (d) Default constraint
34. An entity set that does not have sufficient attributes to form a primary key is termed as
- (a) Strong entity set
  - (b) Weak entity set
  - (c) Simple entity set
  - (d) Primary entity set
35. In PHP, a function which starts with (double underscore) is \_\_\_\_\_
- (a) Magic function
  - (b) Inbuilt function
  - (c) Default function
  - (d) User Defined function
36. Which version of the PHP introduced Try/catch exception ?
- (a) PHP 4
  - (b) PHP 5
  - (c) PHP 5.3
  - (d) PHP 6
37. In PHP, the statement equivalent to  $\$add += \$add$  is
- (a)  $\$add = \$add$
  - (b)  $\$add = \$add + \$add$
  - (c)  $\$add = \$add + 1$
  - (d)  $\$add = \$add + \$add + 1$
38. In PHP, which function will return True if a variable is an array and False if it is not ?
- (a) `this_array ( )`
  - (b) `do_array ( )`
  - (c) `is_array ( )`
  - (d) `in_array ( )`

39. Which one of the following functions is used in PHP to determine whether a class exists ?  
(a) exist ( ) (b) exist\_class ( ) (c) class\_exists ( ) (d) \_exist ( )
40. Which of the following PHP function is used to determine the time when the file was last modified ?  
(a) fileltime ( ) (b) filectime ( ) (c) filetime ( ) (d) fileatime ( )
41. What is the purpose of a „Bridge“ in computer network ?  
(a) To affect the transmission capacity of communication channels.  
(b) To connect computers in a network.  
(c) To define class of IP used in networks.  
(d) None of the above
42. The IPv4 addresses have  
(a) 8 bits (b) 16 bits (c) 32 bits (d) 64 bits
43. In network, each router has two \_\_\_\_\_  
(a) Masks (b) Addresses (c) Blocks (d) Segments
44. Which of the following is associated with MAC address ?  
(a) Transport layer (b) Data link layer  
(c) Application layer (d) Physical layer
45. Which of the following is not a guided media ?  
(a) Fibre optical cable (b) Coaxial cable  
(c) Wireless Lan (d) Copper wire
46. In which layer of the OSI reference model router is supposed to operate ?  
(a) Physical layer (b) Network layer (c) Transport layer (d) Application layer
47. Which of the following protocol(s) is/are defined in Transport layer ?  
(a) FTP and TCP (b) FTP and UDP (c) TCP and UDP (d) FTP
48. Which of the following is (are) the application layer protocol(s) ?  
(a) FTP (b) DNS (c) Telnet (d) All of the above
49. Which of the following is not a key process area in CMM level 5 ?  
(a) Defect prevention (b) Process change management  
(c) Software Product Engineering (d) Technology change management

50. For a function of n input variables, robustness testing yields.
- (a)  $(4n + 3)$  test cases (b)  $(6n + 1)$  test cases  
(c)  $(4n + 1)$  test cases (d)  $(2n + 1)$  test cases
51. Which of the following is not a process metric ?
- (a) Functionality (b) Quality (c) Productivity (d) Efficiency
52. Which two of the following models will not be able to give desired outcome if user's participation is not involved ?
- (a) Waterfall and spiral (b) RAD and spiral  
(c) RAD and waterfall (d) RAD and prototyping
53. A cube of size 1 unit is placed such that origin coincides with one vertex and three axes run along the edges from that vertex. The vertex diagonal opposite to vertex  $(0, 1, 0)$  will be
- (a)  $(0, 0, 0)$  (b)  $(1, 1, 0)$  (c)  $(0, 1, 1)$  (d)  $(1, 0, 1)$
54. Which of these clipping algorithm follows the divide and conquer strategy ?
- (a) 4-bit algorithm (b) Mid-point algorithm  
(c) Cyrus Beck algorithm (d) Cohen Sutherland algorithm
55. Which of the following window is depicted by region code (0000) ?
- (a) Viewing window (b) Left clipping window  
(c) Right clipping window (d) Bottom clipping window
56. Which of the following is changed by the scale transformation of an object ?
- (a) Size (b) Location (c) Shape (d) (a) and (b) both
57. If boundary is specified in a single colour and algorithm proceeds by considering pixels one by one until boundary colour is encountered, this approach is called
- (a) Scan line fill algorithm (b) Boundary fill algorithm  
(c) Flood fill algorithm (d) Parallel curve algorithm
58. The two-dimensional matrix transformation for translation with a units along x-axis and b units along y-axis is

(a)  $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ -a & -b & 1 \end{bmatrix}$  (b)  $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ a & b & 1 \end{bmatrix}$  (c)  $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ a & b & 1 \end{bmatrix}$  (d)  $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ -a & -b & 1 \end{bmatrix}$

59. Let  $d_1$  and  $d_2$  represent vertical path separations from the mathematical line path i.e.  $d_1 = y - y_k$  and  $d_2 = (y_k + 1) - y$ . In Bresenham line algorithm, if  $d_1 < d_2$  then decision parameter will be  
 (a) Positive (b) Equal (c) Negative (d) None of the above
60. In which transformation, the shape of an object can be modified in any of direction depending upon the values assigned ?  
 (a) Reflection (b) Shearing (c) Scaling (d) None of the above
61. Maximum number of edges in a  $n$ -node undirected graph without self loop will be  
 (a)  $n^2$  (b)  $n(n - 1)/2$  (c)  $n - 1$  (d)  $n(n + 1)/2$
62. In which of the following application linked list is not a suitable data structure ?  
 (a) Insertion sort (b) Binary search  
 (c) Radix sort (d) Polynomial manipulation
63. If each node in a tree has value greater than every value in its left subtree and lesser than every value in right subtree, it will be called  
 (a) Complete tree (b) Full binary tree  
 (c) Binary search tree (d) Threaded tree
64. Which of these data structure is most suitable for implementing Breadth First Search (BFS) ?  
 (a) Queue (b) Stack (c) Tree (d) Heap
65. What will be the time required to insert an element in a stack with linked implementation ?  
 (a)  $O(\log_2 n)$  (b)  $O(n)$  (c)  $O(n \log_2 n)$  (d)  $O(1)$
66. GSM is related to which of the following generations of cellular networks ?  
 (a) First generation (b) Third generation  
 (c) Second generation (d) Fourth generation
67. The two addresses required in mobile IP equipped devices are  
 (a) Home and Public addresses (b) Private and Public addresses  
 (c) Home and Care-of addresses (d) None of the above
68. Which of the following is a standard assigned to Bluetooth ?  
 (a) IEEE 802.15.1 (b) IEEE 802  
 (c) IEEE 802.11 (d) IEEE 1471
69. What is the maximum range of Bluetooth, version 5.0 ?  
 (a) 120 metres (b) 200 metres (c) 240 metres (d) None of the above

70. Which of the following represent the closest speed at which 4G and 4G LTE operate ?  
 (a) 200 kbps – 3 Mbps (b) 300 Mbps – 1 Gbps  
 (c) > 1 Gbps (d) None of the above
71. The process of changing the channel associated with current connection when call is in progress is termed as  
 (a) Stand off (b) Handover (c) Hand off (d) None of these
72. Which of the following is a „false“ statement ?  
 (a) The union of two regular sets is regular.  
 (b) The intersection of two regular sets is regular  
 (c) Every subset of regular set is regular  
 (d) None of the above
73. The machine which has the output associated with its states is called as  
 (a) Melay machine (b) Moore machine  
 (c) Xeno machine (d) Finite state machine
74. In which phase of the compiler the Push Down Automata is used ?  
 (a) Lexical analysis (b) Syntax analysis  
 (c) Code optimization (d) Code generation
75. The context sensitive languages are recognized by the machines termed as  
 (a) Push Down Automata (b) Linear Bounded Automata  
 (c) Finite Automata (d) None of the above
76. The language  $L = \{a^n b^n c^n \mid n \geq 0\}$  is  
 (a) Regular language (b) Context free language  
 (c) Context sensitive language (d) None of the above
77. In C++ an exception is thrown using the key word \_\_\_\_\_.  
 (a) throws (b) throw (c) threw (d) thrown
78. Which of the following operator is used to concatenate strings in Java ?  
 (a) & (b) % (c) ++ (d) +
79. Which of the following is not a casting operator in C++ ?  
 (a) explicit\_cast (b) static\_cast (c) dynamic\_cast (d) reinterpret\_cast
80. In C++ Cin and Cout are the predefined stream \_\_\_\_\_.  
 (a) operators (b) objects (c) functions (d) data types



81. The arguments of WinMain( ) function are mandatory and they communicate with \_\_\_\_\_.
- (a) Operating system (b) Hardware  
(c) Kernel (d) None of these
82. Which of the following can be used to manipulate the access control list ?
- (a) X host (b) X host + hostname  
(c) X host\_hostname (d) None of the above
83. Which of these is the extension of VC++ resource file ?
- (a) res (b) rs (c) rc (d) rcp
84. Which of the following tool is used to show the running process in tree view ?
- (a) Process viewer (b) SPY++  
(c) VC++ (d) VB
85. The basic storage element used in clocked sequential circuit is termed as
- (a) Full Adder (b) Multiplexer (c) Flip flop (d) None of the above
86. A Data bus is \_\_\_\_\_
- (a) Unidirection (b) Bidirection (c) Arbitrarily wide (d) None of the above
87. The single bus structure is primarily the feature of –
- (a) Main frame computers (b) Mini computers  
(c) High performance computers (d) Micro computer
88. A \_\_\_\_\_ point of a fuzz set A is point  $x \in X$  at which  $\mu_A(x) = 0.5$ .
- (a) Core (b) Support (c) Cross over (d)  $\alpha$  – cut
89. A perceptron has input weights  $W_1 = -3.9$  and  $W_2 = 1.1$  where threshold value T is 0.3. What output will be yield for input  $X_1 = 1.3$ ,  $X_2 = 2.2$  ?
- (a) -2.65 (b) -2.30 (c) 0 (d) 1
90. A fuzzy set A is called normal when
- (a) Height (A) = 0 (b) Height (A) < 0  
(c) Height (A) = 1 (d) Height (A) < 1
91. Which of the following 2 input Boolean logic function is linearly inseparable ?
- (a) AND (b) OR (c) NOR (d) XOR

92. Consider a Fuzzy set old as defined below :  
 Old =  $\{(20, 0.1), (30, 0.2), (40, 0.4), (50, 0.6), (60, 0.8), (70, 1.0), (80, 1.0)\}$  Then  $\alpha$  – cut of old at  $\alpha = 0.4$  will be  
 (a)  $\{(40, 0.4)\}$   
 (b)  $\{50, 60, 70, 80\}$   
 (c)  $\{(20, 0.1), (30, 0.2)\}$   
 (d)  $\{(20, 0), (30, 0), (40, 1.0), (50, 1), (60, 1), (70, 1), (80, 1)\}$
93. Which file contains setting for all .NET application types such as windows consoles, class libraries and web applications ?  
 (a) Web.config (b) Machine.config (c) Global.asax (d) All of the above
94. Which of these is the first event when a user requests a web page in ASP.NET ?  
 (a) PreLoad (b) Load (c) Preinit (d) Init
95. What is the use of the tag `<canvas>` in HTML page ?  
 (a) Adding any image (b) Graphic drawing using SVG  
 (c) Graphic growing using JavaScript (d) None of the above
96. If you want that command object should return XML data, then which of the following command object method will you use ?  
 (a) getXMIData (b) getXml  
 (c) ExecuteXmlReader (d) None of the above
97. If  $X = 5, Y = 2$  then which of these is  $X \square Y$ , if  $\square$  is a bit wise XOR operator ?  
 (a) 00000111 (b) 10000010 (c) 11001000 (d) 10100000
98. The default parameter passing mechanism is also called as \_\_\_\_\_  
 (a) function call (b) call by value (c) call by reference (d) None of the above
99. In C, which of the following header file includes a function for variable number of arguments ?  
 (a) stdlib.h (b) stdarg.h (c) ctype.h (d) (a) and (b) both
100. To store dissimilar data together which type shall be used ?  
 (a) array (b) structure (c) stack (d) None of these