

ENTRANCE EXAMINATION FOR ADMISSION, MAY 2010.

M.Sc. (COMPUTER SCIENCE)

COURSE CODE : 370



Register Number :

Signature of the Invigilator
(with date)

COURSE CODE : 370

Time : 2 Hours

Max : 400 Marks

Instructions to Candidates :

1. Write your Register Number within the box provided on the top of this page and fill in the page 1 of the answer sheet using pen.
2. Do not write your name anywhere in this booklet or answer sheet. Violation of this entails disqualification.
3. Read each question carefully and shade the relevant answer (A) or (B) or (C) or (D) or (E) in the relevant box of the ANSWER SHEET using HB pencil.
4. Avoid blind guessing. A wrong answer will fetch you -1 mark and the correct answer will fetch 4 marks.
5. Do not write anything in the question paper. Use the white sheets attached at the end for rough works.
6. Do not open the question paper until the start signal is given.
7. Do not attempt to answer after stop signal is given. Any such attempt will disqualify your candidature.
8. On stop signal, keep the question paper and the answer sheet on your table and wait for the invigilator to collect them.
9. Use of Calculators, Tables, etc. are prohibited.

1. Sorting is possible by using which of the following method(s)
 - (A) Insertion
 - (B) Exchange
 - (C) Selection
 - (D) All of the above
 - (E) None of the above
2. What is the major data structure used in the network data model?
 - (A) Array
 - (B) Trees
 - (C) Graph
 - (D) All of the above
 - (E) None of the above
3. Minimum number of queues needed to implement the priority queue is
 - (A) 1
 - (B) 2
 - (C) 3
 - (D) All of the above
 - (E) None of the above
4. In tree construction which is the efficient data structure?
 - (A) Array
 - (B) Linked list
 - (C) Stack
 - (D) All of the above
 - (E) None of the above
5. The time complexity of Quick sort algorithm is
 - (A) $O(n)$
 - (B) $O(n \log n)$
 - (C) $O(n^2)$
 - (D) All of the above
 - (E) None of the above
6. 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(height is the maximum distance of a leaf node from the root)?
 - (A) 2
 - (B) 3
 - (C) 4
 - (D) All of the above
 - (E) None of the above

7. The best data structure to check whether an arithmetic expression has balanced parentheses is a
- (A) Queue
 - (B) Stack
 - (C) Tree
 - (D) All of the above
 - (E) None of the above
8. Let P be a singly linked list. Let Q be the pointer to an intermediate node x in the list. What is the worst-case time complexity of the best known algorithm to delete node x from the list?
- (A) $O(n)$
 - (B) $O(\log n)$
 - (C) $O(1)$
 - (D) All of the above
 - (E) None of the above
9. Which of the following traversal techniques lists the nodes of a binary search tree in ascending order?
- (A) Post-order
 - (B) In-order
 - (C) Pre-order
 - (D) All of the above
 - (E) None of the above
10. Which of the following algorithm solves the all-pair shortest path problem?
- (A) Dijkstra's algorithm
 - (B) Floyd's algorithm
 - (C) Prim's algorithm
 - (D) All of the above
 - (E) None of the above
11. The size of DATE data type in Oracle is
- (A) 7 bytes
 - (B) 5 bytes
 - (C) 6 bytes
 - (D) All of the above
 - (E) None of the above
12. Rollback and Commit affect
- (A) Only DML statements
 - (B) Only DDL statements
 - (C) All statements executed in SQL*PLUS
 - (D) All of the above
 - (E) None of the above

13. The INSTEAD OF trigger works at
- (A) Table Level
 - (B) Row Level
 - (C) Database Level
 - (D) All of the above
 - (E) None of the above
14. Oracle 8i can be best described as
- (A) Relational DBMS
 - (B) Object based DBMS
 - (C) Object Relational DBMS
 - (D) All of the above
 - (E) None of the above
15. The SQL query to retrieve current time in Oracle is
- (A) Select SysTime from dual
 - (B) Select SysDate from dual
 - (C) Select TO_CHAR (SysDate,'HH:MI:SS') from dual
 - (D) All of the above
 - (E) None of the above
16. TRUNCATE TABLE statement
- (A) Drops a table temporarily
 - (B) Removes all rows of a table
 - (C) Removes specified number of rows from a table
 - (D) All of the Above
 - (E) None of the above
17. The owner of all data dictionary tables in Oracle is
- (A) User
 - (B) Admin
 - (C) Sys
 - (D) All of the above
 - (E) None of the above
18. Which of the following is not a RDBMS?
- (A) MS Access
 - (B) Oracle 8i
 - (C) MS SQL Server
 - (D) All of the above
 - (E) None of the above

19. OCI stands for
- (A) Open Call Interface
 - (B) Oracle Call Interface
 - (C) Oracle Communication Interface
 - (D) All of the above
 - (E) None of the above
20. Comments in a PL/SQL code are inserted using
- (A) +
 - (B) /* */
 - (C) *
 - (D) All of the above
 - (E) None of the above
21. Which of the following is not a web browser?
- (A) Internet Explorer
 - (B) Mozilla Firefox
 - (C) Safari
 - (D) All of the above
 - (E) None of the above
22. IP stands for
- (A) Information Protocol
 - (B) Internet Protocol
 - (C) Intranet protocol
 - (D) All of the above
 - (E) None of the above
23. Which of the following is related to client side programming?
- (A) JavaScript
 - (B) HTML
 - (C) CSS
 - (D) All of the above
 - (E) None of the above
24. Which of the following is open source web technology?
- (A) PHP
 - (B) ASP .NET
 - (C) Silver Light
 - (D) All of the above
 - (E) None of the above
25. LAMP stands for
- (A) Linux, Apache, MySql and Process
 - (B) Loader, Apache, MySql and PHP
 - (C) Linux, Apache, MySql and PHP
 - (D) All of the above
 - (E) None of the above

26. CSS is associated with
- (A) Validation
 - (B) Display style
 - (C) Control Section
 - (D) All of the above
 - (E) None of the above
27. Which of the following is not associated with <table> tag?
- (A) <tr>
 - (B) <th>
 - (C) <tc>
 - (D) All of the above
 - (E) None of the above
28. Find the odd item
- (A) <object>
 - (B) <div>
 - (C) <pr>
 - (D) All of the above
 - (E) None of the above
29. Find the odd item
- (A)

 - (B)
 - (C) <i>
 - (D) All of the above
 - (E) None of the above
30. The <meta> tag
- (A) Is placed in side head tag
 - (B) Used to make the page searchable
 - (C) Used to refresh the page
 - (D) All of the above
 - (E) None of the above
31. "Safe State" is associated with
- (A) Deadlock
 - (B) Multithreading
 - (C) Virtual memory
 - (D) All of the above
 - (E) None of the above
32. Context switch
- (A) Varies from machine to machine
 - (B) Is associated with multiprogramming
 - (C) Make the processor shift from one process to another
 - (D) All of the above
 - (E) None of the above

33. Round robin normally has
- (A) High waiting time
 - (B) Low waiting time
 - (C) No waiting time
 - (D) All of the above
 - (E) None of the above
34. The Linux operating system uses
- (A) Round robin method
 - (B) First Come First Serve method
 - (C) Multilevel feedback queue
 - (D) All of the above
 - (E) None of the above
35. Which of the following is/are related to Disk scheduling?
- (A) Noop scheduler
 - (B) FScan
 - (C) NScan
 - (D) All of the above
 - (E) None of the above
36. Which of the following will start the kernel?
- (A) Linker
 - (B) Boot Loader
 - (C) System Swap
 - (D) All of the above
 - (E) None of the above
37. Which of the following Operating System(s) use supervisor mode?
- (A) Linux
 - (B) Solaris
 - (C) Mac
 - (D) All of the above
 - (E) None of the above
38. Multithreading operates at
- (A) Network level
 - (B) System level
 - (C) Process level
 - (D) All of the above
 - (E) None of the above

39. If the process after reaching the "terminated" state is not removed from memory then it is called
- (A) Zombie
 - (B) Ghost
 - (C) Virtual process
 - (D) All of the above
 - (E) None of the above
40. "Dining philosophers" problem is related to
- (A) Process time
 - (B) Concurrency
 - (C) Virtual memory
 - (D) All of the above
 - (E) None of the above
41. The class from which no object is created is called
- (A) Void class
 - (B) Virtual class
 - (C) Abstract class
 - (D) All of the above
 - (E) None of the above
42. A class that is used to traverse through objects of a container class is called
- (A) Vectors
 - (B) Scalars
 - (C) Iterator
 - (D) All of the above
 - (E) None of the above
43. When you use address of an object after its lifetime is over, it leads to
- (A) Dangling pointer
 - (B) Destructor pointer
 - (C) Digit pointer
 - (D) All of the above
 - (E) None of the above
44. Which of the following is not directly supported in Java?
- (A) Overloading
 - (B) Multiple Inheritance
 - (C) Swapping
 - (D) All of the above
 - (E) None of the above

45. Which of the following is/are strictly object oriented?
- (A) Ruby (B) JADE
(C) Small Talk (D) All of the above
(E) None of the above
46. With respect to object oriented programming what does RTTI stands for?
- (A) Rule Type Transfer Image (B) Random Type Transfer Idea
(C) Run Time Type Identification (D) All of the above
(E) None of the above
47. Composition is a specialized form of
- (A) Aggregation (B) Constructor
(C) Destructor (D) All of the above
(E) None of the above
48. Constructors
- (A) Cannot be virtual
(B) Are not supported by most OO Programming language
(C) Cannot be overloaded
(D) All of the above
(E) None of the above
49. A pure virtual function
- (A) Does provide definition (B) Does not provide definition
(C) Is same as virtual function (D) All of the above
(E) None of the above
50. Which of the following is not a storage class?
- (A) Auto (B) Static
(C) Register (D) All of the above
(E) None of the above

51. Common Dialog Boxes in VB
- (A) Allow Visual Basic programs to translate the text on the screen into another language
 - (B) Display the predefined Windows dialog boxes for print, open, save, fonts, and colors
 - (C) Can only be used on forms with menus
 - (D) All of the above
 - (E) None of the above
52. Message Box in VB is
- (A) Modal Dialog Box
 - (B) Modeless Dialog Box
 - (C) Common Dialog Box
 - (D) All of the above
 - (E) None of the above
53. The NewIndex property in VB returns
- (A) The index of the item most recently added to a ListBox or ComboBox control
 - (B) The index of the item selected in a ListBox or Combobox
 - (C) The index of the first item in a Combo box or List box
 - (D) All of the above
 - (E) None of the above
54. Which of these is not a valid messagebox in VB?
- (A) vbRetryCancel
 - (B) vbExitOnly
 - (C) vbAbortRetryIgnore
 - (D) all of the above
 - (E) none of the above
55. The different types of passing value to a function in VB are
- (A) By value
 - (B) By ref
 - (C) Param Array
 - (D) All of the above
 - (E) None of the above
56. The time complexity of breadth first search
- (A) $O(b^d)$
 - (B) $O(d^b)$
 - (C) $O(bd)$
 - (D) All of the above
 - (E) None of the above

57. The representation of the sentence "Every car has an engine" is
- (A) $\forall x \exists y : (CAR(x) \rightarrow (ENGINE(y) \& PART(x,y)))$
 - (B) $\exists x \forall y : (CAR(x) \rightarrow (ENGINE(y) \& PART(x,y)))$
 - (C) $\forall x \forall y : (CAR(x) \rightarrow (ENGINE(x) \& PART(x,y)))$
 - (D) All of the above
 - (E) None of the above
58. Frame structures are used to represent
- (A) A mental model of stereotypical situation
 - (B) Temporal concept
 - (C) Spatial concept
 - (D) All of the above
 - (E) None of the above
59. Heuristic methods are used to
- (A) Reduce the search space
 - (B) Increase the search space
 - (C) Do a DFS search
 - (D) All of the above
 - (E) None of the above
60. NOT (P OR Q) is equivalent to
- (A) NOT P AND NOT Q
 - (B) NOT P OR NOT Q
 - (C) P AND Q
 - (D) All of the above
 - (E) None of the above
61. Which of the following is the least attractive product to sell online?
- (A) Downloadable Music
 - (B) PDA
 - (C) Software
 - (D) All of the above
 - (E) None of the above
62. The primary focus of most B2C applications is to generate
- (A) Revenue
 - (B) Product
 - (C) Awareness
 - (D) All of the above
 - (E) None of the above

63. Which of the following is more significant for web based advertisers?
- (A) Impressions
 - (B) Page views
 - (C) Click through
 - (D) All of the above
 - (E) None of the above
64. What is the most significant part of e-commerce?
- (A) B2B
 - (B) B2E
 - (C) B2C
 - (D) All of the above
 - (E) None of the above
65. Much of Amazon.com's initial success can be attributed to which of the following?
- (A) Brand recognition
 - (B) Low price
 - (C) Fast Web connection
 - (D) All of the above
 - (E) None of the above
66. Which of the following operational mode is the simplest and most usable, as well as the most supported by SSL VPNs?
- (A) Proxy
 - (B) Application Translation
 - (C) Port forwarding
 - (D) All of the above
 - (E) None of the above
67. Routers work at
- (A) Network Layer
 - (B) Physical Layer
 - (C) Transport Layer
 - (D) All of the above
 - (E) None of the above
68. What is the transmission of data through a public network in such a way that the routing nodes in the public network are unaware that the transmission is part of a private network?
- (A) Tunneling
 - (B) VPN
 - (C) Virtual path
 - (D) All of the above
 - (E) None of the above

69. What primary advantage does an IPS offer over IDS that makes it a crucial component of a security strategy?
- (A) The amount of logs generate
 - (B) The speed at which attacks can be mitigated
 - (C) The lower price tag
 - (D) All of the above
 - (E) None of the above
70. This is the hiding of a secret message within an ordinary image and the extraction of it at its destination
- (A) Secret Key Algorithm
 - (B) Byte code
 - (C) Steganography
 - (D) All of the above
 - (E) None of the above
71. Which of the following fields is not included in the TCP header?
- (A) Source and destination port
 - (B) Acknowledgement number
 - (C) Flags
 - (D) All of the above
 - (E) None of the above
72. ICMP can be used to
- (A) Request the subnet mask of an SPN
 - (B) Tell a host to change a route in its routing table
 - (C) "Ping" a host
 - (D) All of the above
 - (E) None of the above
73. A packet filtering firewall can be used to
- (A) Allow TCP connections to the Internet to be initiated from inside but not from outside the firewall
 - (B) Allow an FTP client inside the firewall to access a normal mode FTP server outside the firewall without exposing the client's host to attack
 - (C) Allow an FTP client outside the firewall to access a passive mode FTP server inside the firewall without exposing the server's host to attack
 - (D) All of the above
 - (E) None of the above

74. Which equation best describes the UDP protocol?
- (A) $UDP = IP$ (B) $UDP = TCP - Reliability$
(C) $UDP = TCP - IP$ (D) All of the above
(E) None of the above
75. Which network technology provides the highest level of privacy?
- (A) Wireless Ethernet (B) FDDI
(C) ATM (D) All of the above
(E) None of the above
76. Which of the following protocols has the weakest authentication mechanism?
- (A) FTP (B) TFTP
(C) Rlogin (D) All of the above
(E) None of the above
77. How many addresses are in a subnet whose mask is 255.255.248.0?
- (A) 2^{12} (B) 2^8
(C) 2^{11} (D) All of the above
(E) None of the above
78. The longest method of conversion is with respect to software is
- (A) Direct (B) Parallel
(C) Phased (D) All of the above
(E) None of the above
79. A Nassi-Shneiderman chart
- (A) Can be replaced by flowchart
(B) Often describe overlapping control structure
(C) Are made up of boxes within boxes
(D) All of the above
(E) None of the above

80. Top Management is more interested in
- (A) Day to day operation
 - (B) Strategic decision
 - (C) Tactical decision
 - (D) All of the above
 - (E) None of the above
81. Decision table differs from a decision tree by
- (A) Value to end user
 - (B) Form of representation
 - (C) One shows logic while other shows the process
 - (D) All of the above
 - (E) None of the above
82. Packaged designing includes
- (A) Program flowchart
 - (B) System configuration
 - (C) Module description
 - (D) All of the above
 - (E) None of the above
83. A turnkey package includes
- (A) Hardware
 - (B) Software
 - (C) Training
 - (D) All of the above
 - (E) None of the above
84. Which of the following is not used for estimation with respect to software engineering?
- (A) Historical data
 - (B) Standard formula
 - (C) Checklist
 - (D) All of the above
 - (E) None of the above
85. Which of the following strength is not related to module strength (cohesion)?
- (A) Coincidental
 - (B) Logical
 - (C) Temporal
 - (D) All of the above
 - (E) None of the above

86. What do you call the path the electron beam takes at the end of each refresh cycle?
- (A) Horizontal retrace
 - (B) Vertical retrace
 - (C) Interleaved retrace
 - (D) All of the above
 - (E) None of the above
87. The term used to describe the light given off by a phosphor after it has been exposed to an electron beam is
- (A) Fluorescence
 - (B) Phosphorescence
 - (C) Persistence
 - (D) All of the above
 - (E) None of the above
88. Name the method(s) by which an electron beam can be bent
- (A) Electrostatic deflection
 - (B) Magnetic deflection
 - (C) Electromagnetic deflection
 - (D) All of the above
 - (E) None of the above
89. The distance between the center of the phosphor dot patterns inside of the display screen is known as
- (A) Aspect ratio
 - (B) Frame
 - (C) Pitch
 - (D) All of the above
 - (E) None of the above
90. What is the minimum refresh rate of a raster scan display device?
- (A) 60 frames/sec
 - (B) 30 frames/sec
 - (C) 24 frames/sec
 - (D) All of the above
 - (E) None of the above
91. How many bits are required for a 512×512 raster with each pixel being represented by 3 bits?
- (A) 262144 bits
 - (B) 1536 bits
 - (C) 786342 bits
 - (D) All of the above
 - (E) None of the above

92. How many pixels are there in a 1024×1024 frame buffer?
- (A) 2^{12} pixels (B) 2^{16} pixels
(C) 2^{24} pixels (D) All of the above
(E) None of the above
93. Which one of the following is not an approach to add surface texture in computer graphics?
- (A) Projected texture (B) Texture mapping
(C) Texture synthesis (D) All of the above
(E) None of the above
94. Which is the perpetual term for describing color if the corresponding physical property of light is luminance?
- (A) Brightness (B) Hue
(C) Wavelength (D) All of the above
(E) None of the above
95. A mouse is a
- (A) Locator device (B) Stroke device
(C) Choice device (D) All of the above
(E) None of the above
96. Which line clipping algorithm is computationally efficient?
- (A) Cohen-Sutherland
(B) Liang-Barsky
(C) Nicholl-Lee-Nicholl
(D) All of the above
(E) None of the above

97. Resolution is
- (A) The maximum number of points that can be displayed without overlap on a CRT
 - (B) Number of points/cm that can be plotted horizontally/vertically
 - (C) Total number of points in each direction
 - (D) All of the above
 - (E) None of the above
98. Emissive displays are devices that convert electrical energy into light. Which of the following is not an emissive device?
- (A) Plasma panels
 - (B) Thin-film electroluminescent displays
 - (C) Liquid crystal displays
 - (D) All of the above
 - (E) None of the above
99. Light pen is less popular because
- (A) When light pen is pointed at the screen, part of the image is obscured by hand and pen
 - (B) Prolonged use of light pen causes fatigue
 - (C) Cannot detect positions within black areas
 - (D) All of the above
 - (E) None of the above
100. CGM stands for
- (A) Computer Graphics Modeling
 - (B) Computer Graphics Metadata
 - (C) Computer Graphics Manipulation
 - (D) All of the above
 - (E) None of the above