ENTRANCE EXAMINATION FOR ADMISSION, MAY 2010.

M.Tech. (NETWORK AND INTERNET ENGINEERING)

COURSE CODE : 394

Register Number :

Signature of the Invigilator
(*with date*)

COURSE CODE : 394

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. The simplest search technique is the

    (A) Linear search   (B) Binary search

    (C) Complete search   (D) Merge search

    (E) None of the above

2. The number of comparisons of binary search method is

    (A) log n   (B) n (log n)

    (C) [log₂n] +1   (D) [log n+1]

    (E) None of the above

3. Which of the following features are implemented directly by virtual memory?

    (i).   A larger virtual address space than physical memory

    (ii). Allow multiple processes to share a physical memory

    (iii). Higher bandwidth access to disk

    (iv). A larger number of auto vectored interrupts

    (v).   Protection between processes

    (A) (i), (ii) & (iii)   (B) (i), (ii), (v)

    (C) (i), (ii), (iv)   (D) (i), (iv), (v)

    (E) None of the above

4. The technique by which scatter storage is implemented is often called as

    (A) Linear Addressing   (B) Random Addressing

    (C) Inverse Addressing   (D) Hash Addressing

    (E) None of the above

5. The linear method of collision resolution leads to an undesirable effect called

    (A) Primary Clustering   (B) Secondary Clustering

    (C) Complex Clustering   (D) All of the above

    (E) None of the above

6. A file structure in which every list contains only one record

    (A) Sequential file   (B) Inverted file

    (C) Indexed file   (D) Logical file

    (E) None of the above

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7. In relational model, the data are described by

(A) n-domains (B) n-subset

(C) n-relation (D) n-tuples

(E) none of the above

8. The best known model for dealing with data at an abstract level is called as

(A) Flat Model (B) Tree Model

(C) Hierarchical Model (D) Network Model

(E) None of the above

9. The time complexity of splaying operation is given by

(A) Access Lemma (B) Balance Theorem

(C) Strong Access Theorem (D) All of the above

(E) None of the above

10. The rule which relates the rank of a parent and its siblings is

(A) Access Rule (B) Rank Rule

(C) Relation Rule (D) Top-Down Rule

(E) None of the above

11. In a half adder having two inputs A and B and two outputs (S and C are the sum and carry 0 output bits respectively), the Boolean expression for S and C in terms of A and B is

(A) S=A'B+AB' C=B (B) S=AB+A'B C=A+B

(C) S=A'B'+AB C=A+B' (D) S=A'+A'B' C=A'+B

(E) None of the above

12. How many bits are required to address a 4M × 32-bit main memory if,

(i). Main memory is word-addressable

(ii). Main memory is byte-addressable

(A) 22, 24 (B) 24, 22

(C) 22, 22 (D) 24,24

(E) None of the above

13. How many full adders are required to construct a m-bit parallel adder?

(A) m / 2

(B) m − 1

(C) m

(D) m + 1

(E) none of the above

14. T flip-flop is commonly used as

(A) a digital counter only

(B) a delay switch only

(C) a digital counter and frequency divider

(D) a switch only

(E) none of the above

15. The register which contains the instruction to be executed is called

(A) instruction register

(B) memory address register

(C) index register

(D) all of the above

(E) none of the above

16. Swapping

(A) works best with many small partitions

(B) allows many program to use memory simultaneously

(C) does not work with overlay

(D) allows each program in turn to use the memory

(E) none of the above

17. The length of the tape is between 2 record gap is called as

(A) Blocking Factors

(B) Inter record Gap

(C) Interlock gap

(D) Information Encoded

(E) None of the above

18. Data collections that are stored in hierarchical structure are

(A) File Terminologies

(B) Electronic Disk

(C) Data Transfer Rate

(D) Track

(E) None of the above

19. Technique that avoids the costly rehashing of the whole file by changing the hashing function is called

   (A) Tracks   (B) Overflow

   (C) Dynamic Hashing   (D) Static Hashing

   (E) None of the above

20. Thunder bird is a

   (A) Spreadsheet application   (B) Debugging tool

   (C) Testing Tool   (D) E-mail client

   (E) None of the above

21. Thrashing

   (A) Always occurs on large computers

   (B) Is a natural consequence of virtual memory systems

   (C) Can always be avoided by swapping

   (D) Can be caused by poor paging algorithms

   (E) None of the above

22. The size of the virtual memory depends on

   (A) The size of the data bus   (B) The size of the main memory

   (C) The size of the address bus   (D) All of the above

   (E) None of the above

23. Logical address space is the collection of

   (A) Pages   (B) Frame

   (C) Segmentation   (D) Logical view

   (E) None of the above

24. A candidate key is defined as

   (A) one that uniquely identifies a tuple   (B) no proper subset is possible

   (C) minimal superkey   (D) all of the above

   (E) none of the above

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25. Which is not true in the following?

(A) Functional independence is a direct outgrowth of modularity.

(B) Cohesion is a natural extension of information hiding.

(C) Modularity is the only criteria to increase the rate of reusability.

(D) Design specification contains a requirements cross reference.

(E) Coupling is a measure of interconnection among modules in a software structure.

26. Sanity testing refers to the

(A) Testing the software for checking the possibility of testing the software

(B) Testing the comments of the software

(C) Testing the garbage output values of the Software

(D) All of the above

(E) None of the above

27. The main function of the microkernel is

(A) To provide a communication facility   (B) To provide a security

(C) To provide a reliability   (D) All of the above

(E) None of the above

28. Where the operations "swapping in" and "swapping out" are to be invoked?

(A) CPU   (B) Memory

(C) I/O devices   (D) External devices

(E) None of the above

29. How the user program getting accesses of the service of the kernel?

(A) By using user level and supervisor call

(B) By using system call interface

(C) By using supervisor call

(D) By using user level call

(E) None of the above

30. The fetch policy determines

    (A) When a page should be brought into main memory

    (B) When a frame should be brought into cache memory

    (C) When frame should be brought into main memory

    (D) When segmentation should be brought into main memory

    (E) None of the above

31. What is the output of the following code?

    int a=0;

    void fun(){printf("%d",a);}

    (A) 0   (B) −1

    (C) Garbage value   (D) Error

    (E) None of the above

32. For the following program,

    main ()

    {

    char a[1];

    gets(a);

    printf("%s",a);

    }

    If the input provided is as "Hell Oh World", what type of error will we get?

    (A) Compile time   (B) Run time

    (C) Logical   (D) No Error

    (E) None of the above

33. When a language has the capability to produce new data types, it is called

    (A) extensible   (B) overloaded

    (C) encapsulated   (D) reprehensible

    (E) none of the above

34. What is the order of displaying all n elements in a sorted linked list?

    (A) $O(n)$ (B) $O(\log_2 n)$

    (C) $O(n \log_2 n)$ (D) $O(2n)$

    (E) None of the above

35. The mechanism by which any record can be placed anywhere in the file where there is space for the record is

(A) Random file organization
(B) Hash file
(C) Heap file
(D) All of the above
(E) None of the above

36. Shadow copy scheme is used for ensuring

(A) Concurrency
(B) Atomicity & durability
(C) Consistency
(D) All of the above
(E) None of the above

37. If one attribute is insufficient to identify a record uniquely, then we need

(A) Networked key
(B) Meta-structure
(C) Data dictionary
(D) Combination of columns (attributes)
(E) None of the above

38. A scheduling policy may attempt to optimize on

(A) CPU utilization
(B) Average wait time
(C) Average turnaround time
(D) Average throughput rate
(E) All of the above

39. Which is the first process that will be executed immediately after PC is switched on?

(A) POST
(B) INIT
(C) CMOS
(D) All of the above
(E) None of the above

40. Which of the following disk is having a maximum capacity?

(A) Digital Versatile Disk
(B) Blu Ray
(C) DIVX
(D) Compact Disc
(E) None of the above

41. ADSL is a

(A) Device used for Broad band services
(B) Device used for browsing network
(C) Device used for dialup internet
(D) All of the above
(E) None of the above

42. What is Query evaluation engine?

   (A) It executes low-level instruction generated by compiler

   (B) It executes medium-level instruction generated by compiler

   (C) It executes high-level instruction generated by compiler

   (D) All the above

   (E) None of the above

43. ICMP stands for

   (A) Internet Control Message Protocol

   (B) Internet Configure Message Protocol

   (C) Internet Control Mass Protocol

   (D) Internet Configure Mass Protocol

   (E) None of the above.

44. What is the IEEE specification for Ethernet?

   (A) 802.10   (B) 802.2

   (C) 802.11   (D) 802.3

   (E) 802.5

45. Which command is used to execute SQL command embedded in another high level language?

   (A) EXEC   (B) CALL

   (C) RUN   (D) All of the above

   (E) None of the above

46. Which of the following depicts the correct sequence of transaction processing?

   1. active→partial completed→committed→failed→aborted

   2. active→partial completed→committed

   3. active→partial completed→failure→aborted

   4. active→failure→partial completed→aborted

   (A) only 2   (B) both 2 and 3

   (C) 2,3 and 4   (D) all

   (E) none of the above

47. In compilers, the syntax analysis is done by the
   (A) Lexical analyzer
   (B) Syntactic analyzer
   (C) Parser
   (D) Code generator
   (E) None of the above

48. A system program that set-up an executable program in the main memory which ready for execution is
   (A) Assembler
   (B) Linker
   (C) Loader
   (D) Text editor
   (E) None of the above

49. Storage mapping is done by
   (A) Operating system
   (B) Compiler
   (C) Linker
   (D) Loader
   (E) None of the above

50. Which protocol(s) are using in E-Mail Servers?
   (A) POP3
   (B) IMAP
   (C) SMTP
   (D) All of the above
   (E) None of the above

51. Symbol table can be used for
   (A) checking type compatibility
   (B) suppressing duplication of error message
   (C) storage allocation
   (D) all of the above
   (E) none of the above

52. Double Buffering is also called as ——————
   (A) Buffer Swapping
   (B) Circular Swapping
   (C) I/O Swapping
   (D) Independent Buffering
   (E) None of the above

53. Software Configuration Management controls the evolution and integrity of a produ by
   (A) Planning
   (B) Monitoring and control
   (C) Effort Estimation
   (D) All of the above
   (E) None of the above

54. The X.25 standard specifies a

   (A) Technique for start-stop data   (B) Technique for dial access
   (C) DTE/DCE interface   (D) Data bit rate
   (E) None of the above

55. Which of the following is not a standard synchronous communication protocol?

   (A) RTP   (B) SMTP
   (C) SLIP   (D) PAS
   (E) None of the above

56. Class Library reference should covers

   (A) Operators   (B) Expressions
   (C) Functions   (D) Both (B) and (C)
   (E) None of the above

57. File sharing architecture can be used when the,

   (A) Shared usage is low
   (B) Update contention is low
   (C) Volume of data to be transferred is low
   (D) All of the above
   (E) None of the above

58. Which one of the following is not the advantage of pointers?

   (A) Achieving clarity and simplicity
   (B) Static memory allocations
   (C) Efficient coding
   (D) All of the above
   (E) None of the above

59. A 2 bit binary multiplier can be implemented using

   (A) 2 input ANDs only
   (B) 2 input XORs and 4 input AND gates only
   (C) 2 input NORs and one XNOR gate
   (D) All of the above
   (E) None of the above

60. The prototyping model of software development is

(A) A reasonable approach when requirements are well defined

(B) An useful approach when a customer cannot define requirements clearly

(C) The best approach to use for projects with large development teams

(D) All of the above

(E) None of the above

61. Which of the following is based on Hammer Core Technology?

(A) RISC 9000   (B) STAR X

(C) CISC 8000   (D) All of the above

(E) None of the above

62. What is the main purpose of a data link content monitor?

(A) To detect problems in protocols

(B) To determine the type of transmission used in data link

(C) To determine the type of switching used in data link

(D) All of the above

(E) None of the above

63. The type of light source and fiber chosen for FDDI networks are

(A) Single-mode fiber and 1550-nm lasers

(B) Single-mode fiber and 1300-nm lasers

(C) Multi-mode fiber and 1300-nm LEDs

(D) All of the above

(E) None of the above

64. The Performance of the Slotted Aloha protocol is

(A) Less than 20%   (B) Between 21% to 30%

(C) Between 31% to 40%   (D) Between 41% to 50%

(E) None of the Above

65. Error detection at the data link level is achieved by?

(A) Bit stuffing   (B) Hamming code

(C) Cyclic redundancy Check   (D) Equalization

(E) None of the above

66. Which of the following weights makes the complement operation easier in BCD form?
   (A) 8 4 2 1
   (B) Excess 3
   (C) 2 4 2 1
   (D) 3 2 1 0
   (E) None of the above

67. FFFF will be the last memory location in memory of size
   (A) 1 K
   (B) 16 k
   (C) 32 k
   (D) 64 k
   (E) None of the above

68. In 8085 microprocessor, RLC instruction is equivalent to
   (A) STC
   (B) DAD H
   (C) CMC
   (D) ADC C
   (E) None of the above

69. Macro processor performs
   (A) Recognition of macro definitions and macro calls
   (B) Saves the macro definition
   (C) Expand macros calls and substitute arguments
   (D) All of the above
   (E) None of the above

70. Pseudo instructions are
   (A) Assembler directives
   (B) Instructions in any program that have no corresponding, machine code instruction
   (C) Instructions in any program whose presence or absence will not change the output for any input.
   (D) All of the above
   (E) None of the above

71. A micro programmed control unit
   (A) is faster than a hardwired unit
   (B) facilitates easy implementation of a new instruction
   (C) is useful when small programs are to be run
   (D) all of the above
   (E) none of the above

72. In which addressing mode the operand is given explicitly in the instruction?

(A) absolute mode
(B) immediate mode
(C) indirect mode
(D) index mode
(E) none of the above

73. Bankers algorithm for resource allocation deals with

(A) deadlock prevention
(B) deadlock avoidance
(C) deadlock recovery
(D) mutual exclusion
(E) none of the above

74. BLUETOOTH is a

(A) Wireless Technology
(B) Network Device
(C) Programming Technique
(D) All of the above
(E) None of the above

75. Relocatable programs

(A) Cannot be used with fixed partitions
(B) Can be loaded almost anywhere in memory
(C) Do not need a linker
(D) Can be loaded only at one specific location
(E) None of the above

76. The 8279 require an internal clock frequency of

(A) 150 KHz
(B) 100 KHz
(C) 50 KHz
(D) 25 KHz
(E) None of the above

77. FDDI Stands for

(A) Flexible Data Dependent Interface
(B) Flexible Distributed Data Interface
(C) Flexible Data Distributed Interface
(D) Fiber Distributed Data Interface
(E) None of the above

78. A latch is commonly used to interface with

(A) I/P devices alone
(B) O/P devices alone
(C) IO devices
(D) Serial Data Transfer
(E) None of the above

79. The maximum internal clock of 8085A is

(A) 5 MHz
(B) 3.03 MHz
(C) 6 MHz
(D) All the above
(E) None of the above

80. Jitter is a

(A) Transmission delay
(B) Variation in the packet arrival time
(C) Speed of light transit time
(D) All of the above
(E) None of the above

81. The basic unit of a blue tooth system is

(A) Scatternet
(B) Piconet
(C) Nodes
(D) All the above
(E) None of the above

82. When routers cannot handle packets, they just throw them away. It is to be referred as

(A) Warning bit
(B) Flooding
(C) Load Shedding
(D) All the above
(E) None of the above

83. NNTP stands for

(A) Network News Transfer Protocol
(B) Network –Network Transfer Protocol
(C) Network News Transmission Protocol
(D) Network -Network Transmission Protocol
(E) None of the above

84. Which one of the following cannot be used as a middleware?

(A) RPC
(B) TCP/IP
(C) UDP
(D) All the above
(E) None of the above

90. Advantage(s) of Message switching includes

    (A) Simultaneous availability of sender and receiver is not required

    (B) Messages sent to the inoperative terminals may be intercepted and either stored or rerouted to other terminals

    (C) Message basis error control and recovery procedures can be carried out

    (D) All of the above

    (E) None of the above

91. Which is/are true in the following?

    (A) In the datagram approach each packet will be treated independently

    (B) In the virtual circuit approach, a logical connection is not necessary

    (C) In the circuit switching messages will be stored

    (D) All of the above

    (E) None of the above

92. The Performance of the pure Slotted Aloha protocol is

    (A) Less than 20%   (B) Between 21% to 30%

    (C) Between 31% to 40%   (D) Between 41% to 50%

    (E) None of the Above

93. Fiber-optic cable support maximum frequency of

    (A) 600 THz   (B) 2 GHz

    (C) 700 THz   (D) 1 GHz

    (E) None of the above

94. In which protocol frames are transmitted at completely arbitrary times?

    (A) CSMA   (B) Pure Aloha

    (C) CSMA/CD   (D) Slotted Aloha

    (E) None of the above

95. Which one of the following is a first public data network?

    (A) X.25   (B) Frame Relay

    (C) ATM   (D) All of the above

    (E) None of the above

96. What is the size of the IPV4 Header?

(A) 15 Bytes
(B) 20 Bytes
(C) 12 Bytes
(D) All of the above
(E) None of the above

97. X.25 and TCP/IP are

(A) Routing protocol and protocol suite
(B) Protocol Suite and protocol suite
(C) Routing protocol and routing protocol
(D) All of the above
(E) None of the above

98. The main disadvantage of indexed sequential file is

(A) Insertion & deletion are difficult
(B) Large seek time for huge files
(C) Performance degradation when file grows
(D) All of the above
(E) None of the above

99. Fragmentation occurs in the case of

(A) Contiguous allocation
(B) Linked allocation
(C) Indexed allocation
(D) All of the above
(E) None of the above

100. On a movable-head system, the time it takes to position the head at the track is known as

(A) Latency time
(B) Transfer Time
(C) Rotational Delay
(D) Seek time
(E) All the above