

**ENTRANCE EXAMINATION FOR ADMISSION, MAY 2011.**

**M.Tech. (NETWORK AND INTERNET ENGINEERING)**

**COURSE CODE : 394**

Register Number :

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*Signature of the Invigilator  
(with date)*

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**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. Which memory is capable to determine whether a given datum is exists in one of its address is
 

(A) ROM	(B) PROM
(C) CAM	(D) RAM
(E) None of the above	
  
2. Which is the memory management system?
 

(A) Buddy system	(B) Bridgware
(C) Broadband coaxial system	(D) All of the above
(E) None of the above	
  
3. A plastic card similar to a credit card but having some memory and a microprocessor embedded within it is
 

(A) Punched paper tape	(B) Chip card
(C) Card punch	(D) Magnetic tape
(E) None of the above	
  
4. Which user programmable terminal contains the VDT hardware with built-in microprocessor?
 

(A) Kips	(B) PC
(C) Mainframe	(D) Intelligent terminals
(E) None of the above	
  
5. The number of characters that can be stored in given physical space is defined as
 

(A) Word length	(B) Byte
(C) Data density	(D) Field
(E) None of the above	
  
6. In which access method the access time is depends upon the location of the data?
 

(A) Random access	(B) Serial access
(C) Sequential access	(D) Transaction access
(E) None of the above	
  
7. The complexity of merge sort algorithm is
 

(A) $O(n)$	(B) $O(\log n)$
(C) $O(n^2)$	(D) $O(n \log n)$
(E) None of the above	

8. Arrays are best data structures
- (A) for relatively permanent collections of data
  - (B) for the size of the structure and the data in the structure are constantly changing
  - (C) for relatively temporary collections of data
  - (D) all of the above
  - (E) none of the above
9. Which is not applicable for Binary search algorithm?
- (A) sorted linked list
  - (B) sorted binary trees
  - (C) sorted linear array
  - (D) pointer array
  - (E) none of the above
10. Point the signal which is not included in RS-232-C standard signals categories.
- (A) VDR
  - (B) RTS
  - (C) CTS
  - (D) DSR
  - (E) None of the above
11. Which of the following statement is incorrect?
- (A) Multiplexers are designed to accept data from several I/O devices and transmit a unified stream of data on one communication line
  - (B) HDLC is a standard synchronous communication protocol.
  - (C) RTS/CTS is the way the DTE indicates that it is ready to transmit data and the way the DCW indicates that it is ready to accept data
  - (D) RTS/CTS is the way the terminal indicates ringing
  - (E) None of the above
12. A bridge filters traffic using which type of address?
- (A) IP address
  - (B) MAC address
  - (C) TCP address
  - (D) All of the above
  - (E) None of the above
13. Which data communication method is used to transmit the data over a serial communication link?
- (A) simplex
  - (B) half-duplex
  - (C) full-duplex
  - (D) only (B) and (C)
  - (E) none of the above

14. A \_\_\_\_\_ is created when a unique IP address and port number are used to connect two computers.
- (A) SAP
  - (B) Media transfer coefficient
  - (C) Socket
  - (D) All of the above
  - (E) None of the above
15. Interrupts which are initiated by an I/O drive are
- (A) internal
  - (B) external
  - (C) software
  - (D) all of the above
  - (E) none of the above
16. Pipeline implementation include
- (A) decode instruction
  - (B) fetch operand
  - (C) calculate operand
  - (D) all of the above
  - (E) none of the above
17. A set of programs that handle a firm's database responsibilities is called
- (A) Database Management System (DBMS)
  - (B) Database Processing System (DBPS)
  - (C) Data Management System (DMS)
  - (D) All of the above
  - (E) None of the above
18. A record management system
- (A) can handle many files of information at a time
  - (B) can be used to extract information stored in a computer file
  - (C) always uses a list as its model
  - (D) all of the above
  - (E) none of the above
19. A transparent DBMS
- (A) Cannot hide sensitive information from users
  - (B) Keeps its logical structure hidden from users
  - (C) Keeps its physical structure hidden from users
  - (D) All of the above
  - (E) None of the above

20. Which of the following is most oriented to scientific programming?
- (A) FORTRAN
  - (B) COBOL
  - (C) BASIC
  - (D) PL/1
  - (E) None of the above
21. All of the following are disadvantages of RPG except:
- (A) it is a very machine dependent language
  - (B) it is very limited in scope
  - (C) is not suited for complex problems requiring extensive programming logic
  - (D) it has larger storage requirements
  - (E) none of the above
22. Which OSI layer responsible for mail and file transfers?
- (A) Transport
  - (B) Data link
  - (C) Application
  - (D) Presentation
  - (E) None of the above
23. Using the TCP/IP protocol, if the destination of the packet is outside the subnet, then the packet is sent to the
- (A) switch
  - (B) bridge
  - (C) default gateway
  - (D) router
  - (E) none of the above
24. The two files may be joined into a third file if
- (A) they have a row in common
  - (B) they have a field in common
  - (C) they have no records with the same value in the common field
  - (D) all of the above
  - (E) none of the above
25. What is the language used by most of the DBMSs for helping their users to access data?
- (A) High level language
  - (B) Query language
  - (C) SQL
  - (D) 4GL
  - (E) None of the above

26. A database management system might consist of application program and a software package called
- (A) FORTRAN (B) AUTOFLOW  
(C) BPL (D) TOTAL  
(E) None of the above
27. The regular expression denote a language comprising all possible strings of even length over the alphabet (0,1)
- (A)  $1/0 (1/0)^*$  (B)  $(0/1)(1/0)^*$   
(C)  $(1/0)$  (D)  $(00/01 11/10)^*$   
(E) None of the above
28. An automata in which the output depends only on input is called an
- (A) Automata with a finite memory (B) Moore machine  
(C) Mealy machine (D) Automata without a memory  
(E) None of the above
29. An automata in which the output depends on the states also is called automata with a
- (A) Automata without a memory (B) Finite memory  
(C) Moore machine (D) Mealy machine  
(E) None of the above
30. In a 4 bit weighted resistor D/A converter, the resistor value corresponding to LSB is  $16 \text{ k}\Omega$ . the resistor value corresponding to the MSB will be
- (A)  $1 \text{ k}\Omega$  (B)  $2 \text{ k}\Omega$   
(C)  $4 \text{ k}\Omega$  (D)  $16 \text{ k}\Omega$   
(E) None of the above
31. If the memory chip size is  $256 \times 1$  bits, then the number of chips required to make up 1K bytes of memory is
- (A) 32 (B) 24  
(C) 12 (D) 8  
(E) None of the above

32. For a six bit ladder D/A converter which has digital input of 101001, the analog value is (assume 0 = 0V and 1 = +1V)
- (A) 0.423 (B) 0.552  
(C) 0.641 (D) 0.923  
(E) None of the above
33. Which of these protocols adjust its block size based on the line error rate?
- (A) XMODEM (B) YMODEM  
(C) ZMODEM (D) WXMODEM  
(E) None of the above
34. Which of the following BiSync control codes is not defined in the EBCDIC character set?
- (A) STX (B) ACK0  
(C) ENQ (D) TTX  
(E) None of the above
35. How many messages can be outstanding (unacknowledged) on a BiSync link?
- (A) 1 (B) 2  
(C) 4 (D) 8  
(E) None of the above
36. Which of the following represents parts of a URL?
- (A) protocol  
(B) host name  
(C) directory and filename  
(D) all of the above  
(E) none of the above
37. Turnaround time refers to the
- (A) interval between the submission of a job and its completion  
(B) interval between submission of a request, and the first response to that request  
(C) overall waiting time for a job  
(D) overall execution time for a job  
(E) none of the above

38. What will be output if you will execute the following c code?

```
#include<stdio.h>
#include<math.h>
typedef struct{
    char *name;
    double salary;
}
job;
void main(){
    static job a={"TCS",15000.0};
    static job b={"IBM",25000.0};
    static job c={"Google",35000.0};
    int x=5;
    job * arr[3]={&a,&b,&c};
    printf("%s %f\t",(3,x>>5-4)[*arr]);
}
double myfun(double d){
    d-=1;
    return d;
}
```

- |                         |                       |
|-------------------------|-----------------------|
| (A) TCS 15000.000000    | (B) IBM 25000.000000  |
| (C) Google 35000.000000 | (D) Compilation error |
| (E) None of the above   |                       |

39. What will be output if you will execute following c code?

```
#include<stdio.h>
enum power{
    Dalai,
    Vladimir=3,
    Barack,
    Hillary
};
void main(){
    float leader[Dalai+Hillary]={1.f,2.f,3.f,4.f,5.f};
    enum power p=Barack;
    printf("%0.f",leader[p>>1+1]);
}
```

- |                       |                       |
|-----------------------|-----------------------|
| (A) 1                 | (B) 2                 |
| (C) 5                 | (D) Compilation Error |
| (E) None of the above |                       |



40. What will be output of following c code?

```
void main()
{
    struct bitfield
    {
        unsigned a:5;
        unsigned c:5;
        unsigned b:6;

    }bit;
    char *p;
    struct bitfield *ptr,bit1={1,3,3};
    p=&bit1;
    p++;
    clrscr();
    printf("%d",*p);
    getch();
}
```

- (A) 34                      (B) 12                      (C) 13                      (D) 10  
(E) None of the above
41. Each list item in an ordered or unordered list has which tag?
- (A) list tag              (B) li tag              (C) ls tag              (D) ol tag  
(E) none of the above
42. When the RET instruction at the end of subroutine is executed,
- (A) the information where the stack is initialized is transferred to the stack pointer  
(B) the memory address of the RET instruction is transferred to the program counter  
(C) two data bytes stored in the top two locations of the stack are transferred to the program counter  
(D) two data bytes stored in the top two locations of the stack are transferred to the stack pointer  
(E) none of the above

43. \_\_\_\_\_ refers to the part of the network that is separated by routers, bridges, or switches.
- (A) Partition
  - (B) Node
  - (C) Segment
  - (D) Link
  - (E) None of the above
44. What is the main advantage to classical Vector Systems (VS) compared with RISC based systems (RS)?
- (A) VS have significantly higher memory bandwidth than RS
  - (B) VS have higher clock rates than RS
  - (C) VS are more parallel than RS
  - (D) VS have more disk space than RS.
  - (E) None of the above
45. The performance of a pipelined processor suffers if
- (A) The pipeline stages have different delays
  - (B) Consecutive instructions are dependent on each other
  - (C) The pipeline stages share hardware resources
  - (D) All of the above
  - (E) None of the above
46. How many 8 – bit characters can be transmitted per second over a 8800 baud serial communication link using asynchronous mode of transmission with one start bit, 8 data bits and two stop bits?
- (A) 1100
  - (B) 800
  - (C) 880
  - (D) 3000
  - (E) None of the above
47. What is the difference between XML and HTML?
- (A) HTML is used for exchanging data, XML is not.
  - (B) XML is used for exchanging data, HTML is not.
  - (C) HTML can have user defined tags, XML cannot
  - (D) Both (B) and (C) above
  - (E) None of the above

48. Which of the following statements about XML schemas is incorrect?
- (A) Schemas are defined by xsd tag
  - (B) Schemas can specify integer values
  - (C) Schemas provide data oriented data types
  - (D) All xml documents must have a schema
  - (E) None of the above
49. Which directory implementation is used in most Operating System?
- (A) Single level directory structure
  - (B) Two level directory structure
  - (C) Tree directory structure
  - (D) Acyclic directory structure
  - (E) None of the above

50. What would be the output of following c code?

```
void main()
{
    structbitfield
    {
        unsigned a:5;
        unsigned c:5;
        unsigned b:6;
    }bit;

    char *p;
    structbitfields *ptr,bit1=(1,3,3);
    p=&bit1;
    p++;
    clrscr();
    printf("%d",*p);
    getch();
}
```

- (A) 11
- (B) 13
- (C) 12
- (D) 15
- (E) None of the above

51. Bankers algorithm is used
- (A) to prevent deadlock in operating systems
  - (B) to detect deadlock in operating systems
  - (C) to rectify a deadlocked state
  - (D) all of the above
  - (E) none of the above
52. A declaration of float a,b; in c language occupies \_\_\_\_\_ of memory
- (A) 1 byte
  - (B) 4 bytes
  - (C) 8 bytes
  - (D) 16 bytes
  - (E) None of the above
53. In binary representation, the value 5.75 would be represented as
- (A) 1100.1010
  - (B) 0101.1100
  - (C) 1010.1110
  - (D) 1101.1001
  - (E) None of the above
54. Which of the following code is used in present day computing, which was developed by IBM?
- (A) ASCII
  - (B) Hollerith Code
  - (C) Baudot code
  - (D) EBCDIC code
  - (E) None of the above
55. The complexity of Binary search algorithm is
- (A)  $O(n)$
  - (B)  $O(\log n)$
  - (C)  $O(n^2)$
  - (D)  $O(n \log n)$
  - (E) None of the above
56. Buffering is
- (A) the process of temporarily storing the data to allow for small variation in device speeds
  - (B) a method to reduce cross talks
  - (C) storage of data within transmitting medium until the receiver is ready to receive.
  - (D) a method to reduce routing overhead.
  - (E) none of the above

57. Which of the following statement is not true?
- (A) Multiprogramming implies multitasking
  - (B) Multi-user does not imply multiprocessing
  - (C) Multitasking does not imply multiprocessing
  - (D) Multithreading implies multi-user
  - (E) None of the above
58. Ethernet is related to
- (A) Application Layer
  - (B) Transport Layer
  - (C) Data link Layer
  - (D) All of the above
  - (E) None of the above
59. The mask for Class B address is
- (A) 255.0.0.0
  - (B) 255.255.0.0
  - (C) 255.255.255.0
  - (D) All of the above
  - (E) None of the above
60. An example for error detection code is
- (A) Parity bit method
  - (B) Cyclic redundancy code
  - (C) Hamming code
  - (D) All of the above
  - (E) None of the above
61. The transport protocol used by DNS is
- (A) Transmission Control Protocol
  - (B) User Datagram Protocol
  - (C) Internet Protocol
  - (D) All of the above
  - (E) None of the above
62. The Base 32 equivalent for the binary number (10110011100011110000) is
- (A) 22 14 23 16
  - (B) 11 9 23 31
  - (C) 11 9 7 16
  - (D) All of the above
  - (E) None of the above
63. The IEEE standard used for wireless LAN is
- (A) 803.1
  - (B) 820.11
  - (C) 802.11
  - (D) All of the above
  - (E) None of the above

64. DMA stands for
- |                          |                          |
|--------------------------|--------------------------|
| (A) Dual Mode Access     | (B) Double Memory Access |
| (C) Direct Memory Access | (D) All of the above     |
| (E) None of the above    |                          |
65. Which of the following is distributed operating system?
- |                       |                      |
|-----------------------|----------------------|
| (A) Amoeba            | (B) MAC              |
| (C) UNIX              | (D) All of the above |
| (E) None of the above |                      |
66. The protocol CSMA/CD is related to
- |                       |                      |
|-----------------------|----------------------|
| (A) Data link layer   | (B) Network layer    |
| (C) Physical layer    | (D) All of the above |
| (E) None of the above |                      |
67. In Internet, the mapping from logical address to physical address is taken care by
- |                       |                      |
|-----------------------|----------------------|
| (A) DNS               | (B) ARP              |
| (C) RARP              | (D) All of the above |
| (E) None of the above |                      |
68. Data items grouped for storage purposes are called a
- |                       |            |
|-----------------------|------------|
| (A) Record            | (B) Title  |
| (C) List              | (D) String |
| (E) None of the above |            |
69. An assertion is a condition which a \_\_\_\_\_ must always satisfy.
- |                       |                      |
|-----------------------|----------------------|
| (A) database          | (B) table            |
| (C) attribute         | (D) all of the above |
| (E) none of the above |                      |
70. Pick the odd one out
- |                                    |                              |
|------------------------------------|------------------------------|
| (A) Bubble sort and Selection sort | (B) Heap sort and Merge sort |
| (C) Quick sort and Insertion sort  | (D) All of the above         |
| (E) None of the above              |                              |

71. MMC is an acronym for
- (A) Microsoft Management Console
  - (B) Multimedia Management and Control
  - (C) Microsoft Media Console
  - (D) Microsoft Motion Control
  - (E) None of the above
72. Which tool can be used to find the broken links in a Web site?
- (A) NT Explorer
  - (B) Site Server Express
  - (C) User Manager
  - (D) Performance Monitor
  - (E) None of the above
73. Which of the following network devices translates between data formats?
- (A) Repeater
  - (B) Switch
  - (C) Gateway
  - (D) Router
  - (E) None of the above
74. Which of the following is Class C IP address?
- (A) 10.10.14.118
  - (B) 135.23.112.57
  - (C) 191.200.199.199
  - (D) 204.67.118.54
  - (E) None of the above
75. What protocol is used between E-Mail servers?
- (A) HTTP
  - (B) POP3
  - (C) SNMP
  - (D) SMTP
  - (E) None of the above
76. Which of the following network topologies have each computer connected to a central point?
- (A) Bus
  - (B) Ring
  - (C) Star
  - (D) Mesh
  - (E) None of the above
77. Which of the following network topologies is the most fault tolerant?
- (A) Bus
  - (B) Mesh
  - (C) Star
  - (D) Ring
  - (E) None of the above

78. A Hub operates at which of the following layers of the OSI model?
- (A) Physical
  - (B) Session
  - (C) Transport
  - (D) Application
  - (E) None of the above
79. The terms "red book", "yellow book", and "orange book" refer to:
- (A) SCSI standards
  - (B) IDE standards
  - (C) RAID standards
  - (D) CD-Rom standards
  - (E) None of the above
80. In 8085, the addressing mode of ADD M instruction is
- (A) Immediate addressing mode
  - (B) Indirect addressing mode
  - (C) Direct addressing mode
  - (D) All of the above
  - (E) None of the above
81. What does XMS and EMS refer to?
- (A) extended memory, expanded memory
  - (B) expanded memory, extended memory
  - (C) extra memory systems, expanded memory status
  - (D) expanded memory status, extra memory systems
  - (E) none of the above
82. Virtual memory is composed of:
- (A) A ram and sub-system
  - (B) A bios extension and RAM Chip
  - (C) Ram and a swap file
  - (D) DOS extensions and RAM
  - (E) None of the above
83. Page-Stealer process
- (A) makes rooms for the incoming pages, by swapping the memory pages that are not the part of the working set of a process
  - (B) cannot steal the page, which is being faulted in
  - (C) created by the Kernel at the system initialization and invokes it throughout the lifetime of the system
  - (D) all of the above
  - (E) none of the above



84. Which statement is placed in autoexec.bat to halt its processing until a key is pressed?
- (A) stop (B) hold  
(C) pause (D) interrupt  
(E) none of the above
85. A cluster is the minimum file allocation unit. A cluster is composed of:
- (A) off-set code (B) conventional ram  
(C) sectors (D) clutters  
(E) none of the above
86. "Hot Docking" means that:
- (A) power must be off to remove\install a device  
(B) power can be on to remove\install a device  
(C) a warm boot must be done before a device is removed\installed  
(D) a hot boot must be done before a device is removed\installed  
(E) none of the above
87. Re-entrancy means that
- (A) a process queuing technique for multi-programmed timesharing systems  
(B) a memory-saving technique for multi-programmed timesharing systems  
(C) a substitute waiting queuing technique for multi-programmed timesharing systems  
(D) a substitute process scheduling technique for multi-programmed timesharing systems  
(E) none of the above
88. What is the Output of the program?
- ```
main()
{
    static int var = 5;
    printf("%d ",var--);
    if(var)
        main();
}
```
- (A) 4 (B) 5  
(C) 5 4 3 2 1 (D) Error  
(E) None of the above

89. Mutators are also known as
- (A) Modifiers
  - (B) Test inputs
  - (C) Redundant values
  - (D) All of the above
  - (E) None of the above
90. How many null branches are there in a binary tree with 20 nodes?
- (A) 20
  - (B) 21
  - (C) 4
  - (D) 5
  - (E) None of the above
91. A Router operates in which layer of the OSI model?
- (A) The Network Layer
  - (B) The Data Link Layer
  - (C) The Transport Layer
  - (D) The Application Layer
  - (E) None of the above
92. Which of the following layers of the OSI model does a Bridge operate in?
- (A) The Data Link Layer
  - (B) The Network Layer
  - (C) The Transport Layer
  - (D) The Session Layer
  - (E) None of the above
93. One important difference between routers and bridges is that when a bridge can't locate the destination address in its table it ————?
- (A) sends the transmission to the default gateway
  - (B) dumps the packet
  - (C) broadcasts the transmission to all ports
  - (D) sends the error message to the sender
  - (E) none of the above

94. Belady's anomaly also known as
- (A) FIFO anomaly
  - (B) Waiting Queue Anomaly
  - (C) Low level scheduling anomaly
  - (D) Critical section anomaly
  - (E) None of the above
95. Long term scheduler \_\_\_\_\_ and Medium term scheduling \_\_\_\_\_.
- (A) controls the degree of multiprogramming, controls the swapping function
  - (B) controls the swapping function, controls the degree of multiprogramming
  - (C) controls the swapping function, controls the degree of preemption
  - (D) controls the degree of preemption, controls the swapping function
  - (E) none of the above
96. What is the Output of the program?
- ```
#define clrscr() 100

main()
{
    clrscr();
    printf("%d\n",clrscr());
}
```
- (A) 100
  - (B) Size of the Function
  - (C) 6
  - (D) Error
  - (E) None of the above
97. The method(s) available in storing sequential files is/are:
- (A) Straight merging
  - (B) Natural merging
  - (C) Polyphase sort
  - (D) All of the above
  - (E) None of the above

98. How many different trees are possible with 'n' nodes ?
- (A)  $2^{n-n}$  different trees
  - (B)  $2^n$  different trees
  - (C)  $n^2-2$  different trees
  - (D)  $n^2-n$  different trees
  - (E) none of the above
99. Which of the following cryptography options would increase overhead/cost?
- (A) The encryption is symmetric rather than asymmetric.
  - (B) A long asymmetric encryption key is used.
  - (C) The hash is encrypted rather than the message.
  - (D) A secret key is used.
  - (E) None of the above
100. Which of the following is the GREATEST risk of an inadequate policy definition for ownership of data and systems?
- (A) User management coordination does not exist.
  - (B) Specific user accountability cannot be established.
  - (C) Unauthorized users may have access to originate, modify or delete data.
  - (D) Audit recommendations may not be implemented.
  - (E) None of the above
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