

ENTRANCE EXAMINATION FOR ADMISSION, MAY 2012.

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 of the 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. Interface circuits is used to interconnect I/O devices to a computer's CPU or
  - (A) ALU
  - (B) Memory
  - (C) Buffer
  - (D) Register
  - (E) None of the above
2. Which is used for data processing?
  - (A) RAM chips
  - (B) ROM chips
  - (C) Micro processors
  - (D) PROM chips
  - (E) None of the above
3. In which year Charles Babbage reveals his Analytical Engine to the public?
  - (A) 1820
  - (B) 1860
  - (C) 1855
  - (D) 1870
  - (E) None of the above
4. RATS stand for
  - (A) Regression Analysis Time Series
  - (B) Regression Analysis Time Sharing
  - (C) Real Analysis Time Series
  - (D) Real Analysis Time Sharing
  - (E) None of the above
5. Which was the first commercially available microprocessor?
  - (A) Intel 308
  - (B) Intel 33
  - (C) Intel 4004
  - (D) Motorola 639
  - (E) None of the above
6. In which year the minicomputer was built?
  - (A) 1965
  - (B) 1962
  - (C) 1971
  - (D) 1966
  - (E) None of the above
7. Which of the following represents the GREATEST potential risk in an Electronic Data Interchange environment?
  - (A) Transaction authorization
  - (B) Loss or duplication of EDI transmissions
  - (C) Transmission delay
  - (D) Deletion or manipulation of transactions prior to or after establishment of application controls
  - (E) None of the above

8. Why the elements of an array are stored serially in the memory cells?
- (A) Because the computer can keep track only the address of the first element and the other elements address are calculated accordingly.
  - (B) The architecture of computer memory does not allow arrays to store other than serially
  - (C) Because it is easy to manipulate.
  - (D) All of the above
  - (E) None of the above
9. Which of the following is two way list?
- (A) Grounded header list
  - (B) Circular header list
  - (C) Linked list with header and trailer nodes
  - (D) All of the above
  - (E) None of the above
10. What is the minimum number of wires needed to send data over a serial communication link layer?
- (A) 1
  - (B) 2
  - (C) 4
  - (D) 6
  - (E) None of the above
11. Which of the following types of channels moves data relatively slowly?
- (A) Wide band channel
  - (B) Voice band channel
  - (C) Narrow band channel
  - (D) All of the above
  - (E) None of the above
12. Most data communications involving telegraph lines use
- (A) Simplex lines
  - (B) Wideband channel
  - (C) Narrowband channel
  - (D) Dialed service
  - (E) None of the above



13. A communications device that combines transmissions from several I/O devices into one line is a
- (A) Concentrator
  - (B) Modifier
  - (C) Multiplexer
  - (D) Full-duplex line
  - (E) None of the above
14. In a synchronous modem, the receive equalizer is known as
- (A) Adaptive equalizer
  - (B) Impairment equalizer
  - (C) Statistical equalizer
  - (D) Compromise equalizer
  - (E) None of the above
15. Which of the following code is used in present day computing was developed by IBM Corporation?
- (A) ASCII
  - (B) Hollerith Code
  - (C) Baudot code
  - (D) EBCDIC code
  - (E) None of the above
16. When a subroutine is called, the address of the instruction following the CALL instructions stored in/on the
- (A) Stack pointer
  - (B) Accumulator
  - (C) Program counter
  - (D) Stack
  - (E) None of the above
17. A file produced by a spreadsheet
- (A) Is generally stored on disk in an ASCII text format
  - (B) Can be used as is by the DBMS
  - (C) Both a and b
  - (D) All of the above
  - (E) None of the above
18. Which of the following is not true of the traditional approach to information processing?
- (A) There is common sharing of data among the various applications
  - (B) It is file oriented
  - (C) Programs are dependent on the file
  - (D) All of the above
  - (E) None of the above

19. Batch processing is appropriate if
- (A) Large computer system is available
  - (B) Only a small computer system is available
  - (C) Only a few transactions are involved
  - (D) All of the above
  - (E) None of the above
20. Which of the following is not one of the process that a high level language program must go through before it is ready to be executed?
- (A) Translation
  - (B) Controlling
  - (C) Linking
  - (D) All of the above
  - (E) None of the above
21. Which of the following is not true of FORTRAN?
- (A) It was developed for scientific and mathematical applications
  - (B) It is one of the oldest high-level languages
  - (C) It is a problem oriented language
  - (D) All of the above
  - (E) None of the above
22. The "return 0;" statement in main function indicates
- (A) The program did nothing; completed 0 tasks
  - (B) The program worked as expected without any errors during its execution
  - (C) Not to end the program yet.
  - (D) All of the above
  - (E) None of the above
23. Identify the correct statement regarding scope of variables
- (A) Global variables are declared in a separate file and accessible from any program.
  - (B) Local variables are declared inside a function and accessible within the function only.
  - (C) Global variables are declared inside a function and accessible from anywhere in program.
  - (D) Local variables are declared in the main body of the program and accessible only from functions.
  - (E) None of the above

24. The master list of an indexed file
- (A) Is stored in an ascending order
  - (B) Contains only a list of keys and record numbers
  - (C) Has a number assigned to each record
  - (D) All of the above
  - (E) None of the above
25. Embedded pointer provide
- (A) A secondary access path
  - (B) A physical record key
  - (C) An inverted index
  - (D) All of the above
  - (E) None of the above
26. The management information system (MIS) structure with one computer system is called a
- (A) Hierarchical MIS structure
  - (B) Distributed MIS structure
  - (C) Centralized MIS structure
  - (D) Decentralized MIS structure
  - (E) None of the above
27. An automata in which the output depends only the states of the machine is called
- (A) Automata without a memory
  - (B) Finite memory
  - (C) Moore machine
  - (D) Mealy machine
  - (E) None of the above
28. An automata in which the output depends on the state and the input at any instant of time is called a
- (A) Automata without a memory
  - (B) Finite memory
  - (C) Moore machine
  - (D) Mealy machine
  - (E) None of the above
29. A Turing machine can simulate a RAM, provided that the elementary RAM instructions can themselves be simulated by a
- (A) ROM
  - (B) RAM
  - (C) CD
  - (D) TM
  - (E) None of the above
30. Which one of the following is a D to A conversion technique?
- (A) Successive approximation
  - (B) Weighted resistor technique
  - (C) Dual-slope technique
  - (D) Single-slope technique
  - (E) None of the above



31. For a  $\mu P$  system using IO mapped and IO, which of the following statement(s) is/are NOT true
- (A) Memory space available is greater
  - (B) Not all data transfer instruction, are available
  - (C) IO and Memory address spaces are distinct.
  - (D) IO address space is greater
  - (E) None of the above
32. In D-type Flip Flop, Preset (Pr) and Clear (Clr) inputs are called
- (A) Synchronous
  - (B) Asynchronous
  - (C) Data
  - (D) Overriding
  - (E) None of the above
33. Which code set is used in BiSync when VRC/LRC is being used but not in transparency mode?
- (A) EBCDIC
  - (B) ASCII
  - (C) SBT
  - (D) Field data
  - (E) None of the above
34. Which of the following is the escape character that identifies control characters in BiSync transparency mode?
- (A) ESC
  - (B) SYN
  - (C) DLE
  - (D) RVI
  - (E) None of the above
35. One primary difference between DDCMP and SDLC is
- (A) DDCMP does not have a transparent mode
  - (B) SDLC does not use a CRC
  - (C) DDCMP has a message header
  - (D) DDCMP does not require special hardware to find the beginning of a message
  - (E) None of the above

36. Which of the following represents attribute of <EMBED> tag?

- (A) SRC (B) WIDTH (C) HEIGHT  
(D) All of the above (E) None of the above

37. Default value for COLSPAN is

- (A) 0 (B) 1 (C) NULL  
(D) All of the above (E) None of the above

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

```
#include<stdio.h>
#include<conio.h>
void main(){
    int a[]={0,1,2,3,4,5,6,7,8,9,10};
    int i=0,num;
    num=a[++i+a[++i]]+a[++i];
    printf("%d",num);
}
```

- (A) 6 (B) 7  
(C) 9 (D) Compilation Error  
(E) None of the above

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

```
#include<stdio.h>
#include<conio.h>
void main(){
    int i=3,val;
    val=sizeof f(i)+ f(i=1)+ f(i-1);
    printf("%d %d",val,i);
}
int f(int num){
    return num*5;
}
```

- (A) 2 0 (B) 7 1  
(C) 17 0 (D) Compilation Error  
(E) None of the above



40. What will be output when you will execute following c code?

```
#include<stdio.h>
```

```
void main(){
```

```
    static int a=2,b=4,c=8;
```

```
    static int *arr1[2]={&a,&b};
```

```
    static int *arr2[2]={&b,&c};
```

```
    int* (*arr[2])[2]={&arr1,&arr2};
```

```
    printf("%d %d\t",*(*arr[0])[1], *(*(**(arr+1)+1)));
```

```
}
```

- (A) 2 4 (B) 2 8 (C) 4 2  
(D) 4 8 (E) None of the above
41. Validity fault refers to a
- (A) Process referring a page in the main memory whose valid bit is not set  
(B) Process referring a page in the main memory whose information is not valid  
(C) Process referring a page in the main memory whose access is restricted  
(D) Process referring a page in the main memory with wrong reference  
(E) None of the above
42. Fault handler can be executed at the
- (A) User Mode (B) Kernel Mode (C) Safe Mode  
(D) All of the above (E) None of the above
43. What is the Output of the program?

```
void main()
```

```
{
```

```
char far *farther,*farthest;
```

```
printf("%d..%d",sizeof(farther),sizeof(farthest));
```

```
}
```

- (A) 4..2 (B) 4..2..3 (C) 2..3 (D) Error  
(E) None of the above
44. What is the Output of the program?

```
main()
```

```
{
```

```
int i;
```

```
printf("%d",scanf("%d",&i)); // value 10 is given as input here
```

```
}
```

- (A) Address of the Variable i (B) 1 (C) 10  
(D) Error (E) None of the above

45. What can be used to transform XML into HTML?
- (A) XLT (B) DOM (C) DTD  
(D) XSLT (E) None of the above
46. Which of the following comes closest to being a perfectly secure encryption scheme?
- (A) The Caesar Cipher, a substitution cipher  
(B) DES (Data Encryption Standard), a symmetric-key algorithm  
(C) Enigma, a transposition cipher  
(D) One-time pad  
(E) None of the above
47. A hashing function for digital signature
- (i) must give a hashed message which is shorter than the original message  
(ii) must be hardware implementable  
(iii) two different messages should not give the same hashed message  
(iv) is not essential for implementing digital signature
- (A) i and ii (B) ii and iii (C) i and iii (D) iii and iv  
(E) None of the above
48. DES and public key algorithm are combined
- (i) to speed up encrypted message transmission  
(ii) to ensure higher security by using different key for each transmission  
(iii) as a combination is always better than individual system  
(iv) as it is required in e-Commerce
- (A) i and ii (B) ii and iii (C) iii and iv (D) i and iv  
(E) None of the above

49. The situation when in a linked list  $START=NULL$  is to be referred as  
 (A) Underflow (B) Overflow (C) Housefull  
 (D) Saturated (E) None of the above
50. In the \_\_\_\_\_ random-access method there is no collision.  
 (A) CSMA/CD (B) CSMA/CA (C) ALOHA  
 (D) Token-passing (E) None of the above
51. GSM uses \_\_\_\_\_ for multiplexing.  
 (A) CDMA (B) TDMA (C) FDMA (D) (B) and (C)  
 (E) None of the above
52. In XML schema, which of the following statements is incorrect?  
 (A) They offer more flexibility than DTDs  
 (B) All XML documents must have a schema  
 (C) Schemas are defined by XSD tag  
 (D) Schemas can specify integer values  
 (E) None of the above
53. Circuit Level firewall operates at the  
 (A) Data Link Layer (B) Presentation Layer  
 (C) Network Layer (D) Transport Layer  
 (E) None of the above
54. The file jdbgmgr.exe and the teddy bear icon are associated with which type of threat?  
 (A) Virus (B) Hoax (C) Worm (D) Trojan  
 (E) None of the above
55. In a graph,  $e=(u, v)$  means  
 (A)  $u$  is adjacent to  $v$  but  $v$  is not adjacent to  $u$   
 (B)  $e$  begins at  $u$  and ends at  $v$   
 (C)  $u$  is processor and  $v$  is successor  
 (D) Both (B) and (C)  
 (E) None of the above



56. Which of the following sorting algorithm has average sorting behavior?
- (A) Bubble sort      (B) Merge sort      (C) Heap sort  
(D) Exchange sort      (E) None of the above
57. In binary search tree, which traversal is used for getting ascending order values?
- (A) In order      (B) Pre order      (C) Post order  
(D) Level order      (E) None of the above
58. Router is operated at
- (A) Application layer      (B) Transport layer  
(C) Network layer      (D) All of the above  
(E) None of the above
59. The maximum size of the packet used by Internet Protocol is
- (A) 1500 bytes      (B) 65535 bytes      (C) 2MB  
(D) All of the above      (E) None of the above
60. When a process is waiting for Input/output then the process is said to be in
- (A) Ready state      (B) End state      (C) Blocked state  
(D) All of the above      (E) None of the above
61. Which of the following scheduling policy is well suited for a time-shared operating system?
- (A) Shortest job first      (B) FCFS  
(C) Round Robin      (D) All of the above  
(E) None of the above
62. The update authorization on a database allows
- (A) Modification, deletion, insertion      (B) Allows modification, no insertion  
(C) Allows modification , no deletion      (D) All of the above  
(E) None of the above

63. E-R modeling technique is a
- (A) Top-down approach
  - (B) Bottom-up approach
  - (C) Left-right approach
  - (D) All of the above
  - (E) None of the above
64. Mutation testing is a \_\_\_\_\_ testing method
- (A) Specification based
  - (B) Code based
  - (C) Adequacy
  - (D) All of the above
  - (E) None of the above
65. Test efforts needed are very high in \_\_\_\_\_ language(s) compared to C language.
- (A) C++
  - (B) Java
  - (C) Smalltalk
  - (D) All of the above
  - (E) None of the above
66. The maximum number of bytes of user data present in ATM cell is
- (A) 53
  - (B) 64K
  - (C) 48
  - (D) All of the above
  - (E) None of the above
67. In block mode, the DMA controller tells the device to acquire the bus, issue a series of transfers, then release the bus. This form of operation is called
- (A) Cycle Stealing
  - (B) Fast mode
  - (C) Burst mode
  - (D) All of the above
  - (E) None of the above
68. Periodically adding, changing and deleting file records is called file
- (A) Updating
  - (B) Upgrading
  - (C) Restructuring
  - (D) Renewing
  - (E) None of the above
69. A domain constraint applies to
- (A) Attribute
  - (B) Record
  - (C) Table A
  - (D) All of the above
  - (E) None of the above

70. When a recursive algorithm is converted to an iterative algorithm
- (A) Its space complexity increases
  - (B) Its time complexity increases
  - (C) Length of the program increases
  - (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. Reentrancy 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. Resolves domain names into IP addresses  
 (A) DHCP (B) DNS (C) WINIPCFG  
 (D) Address Resolution Protocol (E) None of the above
92. The IEEE 802 standards operate at these layers of the OSI model?  
 (A) Network and transport (B) Session and presentation  
 (C) Physical and data link (D) Application and session  
 (E) None of the above
93. A token-ring network has a maximum limit of \_\_\_\_\_ computers?  
 (A) 1024 (B) 260 (C) 512  
 (D) 128 (E) None of the above
94. Response 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
95. The base addresses of the last few referenced pages is maintained in registers called the  
 (A) Program counter (B) Stack pointer  
 (C) Translation Lookaside Buffer (D) Process Control Block  
 (E) None of the above
96. What is the Output of the program?  

```
enum colors {BLACK,BLUE,GREEN}
main()
{
printf("%d..%d..%d",BLACK,BLUE,GREEN);
return(1);
}
```

 (A) 1..2..3 (B) Garbage Values  
 (C) 0..1..2 (D) Error  
 (E) None of the above



97. What is the type of the algorithm used in solving the 8 Queens problem?
- (A) Divide and Conquer (B) Backtracking  
(C) Dynamic Programming (D) All of the above  
(E) None of the above
98. The application(s) of tree data-structure include(s)
- (A) Manipulation of arithmetic expression  
(B) Symbol table construction  
(C) Syntax analysis  
(D) All of the above  
(E) None of the above
99. The data dictionary is a
- (A) Table (B) Database (C) File E-R Modeling  
(D) All of the above (E) None of the above
100. Which of the following statements is true? When a referential integrity constraint is violated, it results in
- (A) Rejection of the action causing the violation  
(B) Perform the action specified in the cascade clause  
(C) Aborting the transaction  
(D) All of the above  
(E) None of the above
-