



श्री चित्रा तिरुनाल आयुर्विज्ञान और प्रौद्योगिकी संस्थान, तिरुवनन्दपुरम् - ६९५ ०११, केरल, भारत
SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES & TECHNOLOGY
THIRUVANANTHAPURAM – 695 011 KERALA, INDIA
(An Institute of National Importance under Govt. of India)
(भारत सरकार के अधीन एक राष्ट्रीय महत्व संस्थान)
Ph: 0471-2443152, FAX: 0471-2446433, 2550728
Email: sct@sctimst.ac.in Website - www.sctimst.ac.in

WRITTEN TEST FOR THE POST OF
TECHNICAL ASSISTANT (INSTRUMENTS) –(NETWORKING SERVICES DIVISION)

Roll No.

Date: 30.10.2017

Time: 9.30 A.M


Duration: 90 Minutes

Total Marks: 80

INSTRUCTIONS TO THE CANDIDATE

1. Write your Roll Number on the top of the Question Booklet and in the OMR sheet.
2. Each question carries 1 mark.
3. There will not be any Negative marking.
4. Darken only the bubble corresponding to the most appropriate answer.
5. Marking more than one answer will invalidate the answer.
6. Candidate should sign in the Question paper and OMR sheet.
7. Candidate should hand over the question paper and OMR sheet to the invigilator before leaving the examination hall.

Signature of the Candidate


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1. A given memory chip has 12 address pins and 4 data pins. It has the following number of locations

- (a) 2^2
- (b) 2^{12}
- (c) 2^{48}
- (d) 2^{16}

2. In a multiprogramming environment

- (a) the processor executes more than one process at a time
- (b) the programs are developed by more than one person
- (c) more than one process resides in memory
- (d) a single user can execute many programs at the same time

3. Which of the following is an open source operating system?

- (a) Mac OS
- (b) Linux
- (c) Windows
- (d) None of these

4. Data unit is known as a frame in _____ layer

- (a) Physical
- (b) Data link
- (c) Network
- (d) Transport

5. Which HTML tag gives bigger heading in size?

- (a) H1
- (b) H3
- (c) H6
- (d) Header

6. The decimal equivalent of the binary number 101.101 is

- (a) 5.5
- (b) 5.25
- (c) 5.675
- (d) 5.625

7. The address resolution protocol (ARP) is used for

- (a) Finding the IP address from the DNS
- (b) Finding the IP address of the default gateway

- (c) Finding the IP address that corresponds to a MAC address
- (d) Finding the MAC address that corresponds to an IP address

8. SQL stands for

- (a) Sequential Query Language
- (b) Structured Queue Language
- (c) Structured Query Language
- (d) Simple Query Language

9. In Entity-Relationship (ER) diagram, rectangle represents

- (a) Attributes
- (b) Entity set
- (c) Relationship
- (d) None of these

10. What is a shell ?

- a) It is a hardware component
- b) It is a command interpreter
- c) It is a part in compiler
- d) It is a tool in CPU scheduling

11. Detection and recovery from errors in the transmitted data is the function of

- (a) Data link layer
- (b) Network layer
- (c) Transport layer
- (d) None of these

12. Which of the following is not SQL database manipulation statement

- (a) UPDATE
- (b) CREATE TABLE
- (c) INSERT
- (d) DELETE

13. A program at the time of executing is called _____

- a) Dynamic program
- b) Static program
- c) Binded Program
- d) A Process

14. Which of the following is not a DBMS package?

- (a) Oracle
- (b) MySQL

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- (c) SQL Server
- (d) Android

15. _____ begins at the root and follows a path down to the specified file

- a) Relative path name
- b) Absolute path name
- c) Standalone name
- d) 4 All of the above

16. Bringing a page into memory only when it is needed, this mechanism is called

- a) Deadlock
- b) Page fault
- c) Dormant paging
- d) Demand paging

17. What is the expanded form of LAN?

- (a) Local Area Network
- (b) Local Aided Network
- (c) Large Area Network
- (d) Long Antenna Network

18. Which of the following is/are true for ODBC in database connectivity?

- (a) It stands for Open Database Connectivity
- (b) It is independent of database systems and operating systems
- (c) It is a standard C programming language middleware API
- (d) All of these

19. ACID properties are related to

- (a) Database transaction
- (b) Computer networks
- (c) Computer hardware
- (d) Operating systems

20. If you turn on a PC and the boot-up process halts, giving you the message: "Non-System disk or disk error....Replace and press any key when ready", the problem is likely:

- (a) A non-bootable floppy disk is in the floppy-disk drive and you should remove it
- (b) The hard-drive has failed and you should replace it
- (c) RAM has failed and you should replace it
- (d) A key on the keyboard is stuck and the keyboard should be replaced

21. The size of the monitor is determined by measuring the screen

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- (a) Vertically, from top to bottom
- (b) Horizontally, from left to right
- (c) Diagonally, from the top left corner to the bottom right corner
- (d) None of these

22. When changes occur in a data item, if every file which contains that field should not be updated then, it leads to

- (a) Data redundancy
- (b) Data inconsistency
- (c) Data security
- (d) Data loss

23. Pipe symbol is represented by

- a) ||
- b) ^
- c) |
- d) \$

24. A socket address in computer networking is a combination of

- (a) IP address and computer name
- (b) IP address and MAC address
- (c) IP address and port number
- (d) IP address and URL

25. Which of the following is not a general purpose server side scripting language?

- (a) PHP
- (b) ASP.NET
- (c) Javascript
- (d) JSP

26. A tiny bootstrap loader program

- (a) Hard disk
- (b) ROM
- (c) BIOS
- (d) None

27. The value of EOF in C language is

- (a) 0
- (b) -1

- (c) 1
- (d) None of these

28. What will be the output of the following C code?

```
int main(){
    int a[]={1,2}; printf("%d %d ",a[0],a[1]);
    a[1,0]=22; printf("%d %d",a[0],a[1]);
    return 0;
}
```

- (a) 1 2 22 1
- (b) 1 2 22 2
- (c) Compiler error
- (d) None of these

29. What will be the output of the following C code?

```
int main()
{
    char s[] = "ant"; int i;
    for(i=0;s[i];i++)
        printf("%c%c%c%c%c",s[i],*(s+i),*(i+s),i[s]);
    return 0;
}
```

- (a) Compiler error
- (b) aaannnttt
- (c) Infinite loop
- (d) aaaannntttt

30. The following C code will print

```
int main()
{
    int a=- -10;
    printf("a=%d",a);
    return 0;
}
```

- (a) a=10
- (b) a=-10
- (c) Compiler error
- (d) a=- -10

31. The following C code will display

```
int main()
{
```

```
int i=1,j=2;
switch(i)
{
case 1: printf("ONE ");break;
case j: printf("TWO");break;
}
return 0;
}
```

- (a) ONE TWO
- (b) ONE ONE
- (c) None of these
- (d) Compiler error

32. Which of the following data types are preceded by a percent sign (%) in Perl?

- a) Scalar
- b) Hashes
- c) Array
- d) All of the above

33. RAM is called DRAM when

- a) It is always moving around data
- b) It require periodic refreshing
- c) It can do several things simultaneously
- d) None

34. float a = 3.0, b = -17.0;
float *fp;

```
fp = &b;
b++;
*fp = *fp - 2.0;
a = *fp;
a++;
```

What are the values of a, b and *fp after executing the above code?

- a) -17.0, -17.0, -17.0
- b) b) -17.0, -17.0, -18.0
- c) c) -17.0, -18.0, -18.0
- d) d) 3.0, -16.0, -18.0

35. What does port number in a TCP connection specify?

- a) It specify the size of the data

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- b) It specifies the quality of the data & connection
- c) It specifies the communication process on the two end systems
- d) All of the above

36. DHCP Server provides _____ to the client.

- a) Network address
- b) MAC address
- c) Protocol
- d) IP address

37. What is the address size of IPv6?

- a) 128 bits
- b) 32 bits
- c) 64 bits
- d) 256 bits

38. What is the size of Network bits & Host bits of Class A of IP address?

- a) Network bits 7, Host bits 24
- b) Network bits 8, Host bits 24
- c) Network bits 7, Host bits 23
- d) Network bits 8, Host bits 23

39. How many layers are in the TCP/IP model?

- a) 7 layers
- b) 4 layers
- c) 6 layers
- d) 5 layers

40. The time required to examine a packet's header and to determine where to direct the packet is part of delay.

- a) Queuing delay
- b) Transmission delay
- c) Processing delay
- d) Propagation delay

41. In TCP, SYN flag is used in

- a) Connection establishment
- b) Data Transfer
- c) Connection termination
- d) None of the above

42. Host aliasing service is provided by protocol.

- a) DNS
- b) HTTP
- c) FTP
- d) SMTP

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43. How many root DNS servers are present in the Internet?
- a) 20
 - b) 13
 - c) 7
 - d) 3
44. Which of the following is not a mail access protocol?
- a) POP3
 - b) IMAP
 - c) SMTP
 - d) None of these
45. HTTP uses protocol as its underlying transport protocol.
- a) UDP
 - b) TCP
 - c) CPD
 - d) DPT
46. Which feature of HTTP given below allows a cache to verify that its objects are up to date?
- a) GET
 - b) POST
 - c) Conditional GET
 - d) Conditional POST
47. The port number (s) used by FTP is/are.....
- a) 21
 - b) 20
 - c) 20 & 21
 - d) 20 & 19
48. Congestion control is offered by which of the following protocol?
- a) UDP
 - b) IP
 - c) TCP
 - d) HTTP
49. Well-known port numbers are in the range.....
- a) 0 to 1000
 - b) 0 to 1023
 - c) 0 to 127
 - d) 0 to 65535
50. Routing protocol RIP uses as its transport protocol.
- a) TCP
 - b) UDP
 - c) DCCP

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- d) RSVP
51. What is the time needed to actually transmit a packet of size 1, 000 bytes (8, 000 bits) including both header fields and data into a 1 Gbps link?
- a) 8 microseconds
 - b) 16 microseconds
 - c) 4 microseconds
 - d) None of these
52. Which of the following command can be used to change the MTU value?
- a) ping
 - b) ifconfig
 - c) traceroute
 - d) netstat
53. Which command can be used to test the connectivity between nodes in a wide area network?
- a) ifconfig
 - b) netstat
 - c) nslookup
 - d) ping
54. IEEE 802.11 is the standard for
- a) Ethernet
 - b) Token ring
 - c) Wifi
 - d) Cable modem
55. TCP with security services is called -----
- a) SSL
 - b) TFTP
 - c) IP
 - d) None of these
56. Which of the following can be used to create VPNs over public Internet?
- a) IP
 - b) IPsec
 - c) VoIP
 - d) None of these
57. Global allocation of IP address is controlled by
- a) RFC
 - b) IANA
 - c) IESG
 - d) IRTFC
58. Which scheduling policy is most suitable for time shared operating systems?
- a) Shortest Job First

- b) Round Robin
 - c) First come First Serve
 - d) Elevator
59. Which of the following is an example of Spooled device ?
- a) A line printer used to print the output of a number of Jobs.
 - b) A terminal used to enter input data to a running program.
 - c) A secondary storage device in a virtual memory system.
 - d) A graphic display device.
60. If the disk head is located initially at 32, find the number of disk moves required with FCFS if the disk queue of I/O blocks requests are 98, 37, 14, 124, 65, 67.
- a) 239
 - b) 310
 - c) 321
 - d) 325
61. Which of the following memory allocation scheme suffers from external fragmentation ?
- a) Segmentation
 - b) Pure demand paging
 - c) Swapping
 - d) Paging
62. What is the best method to go for the game playing problem?
- a) Optimal Search
 - b) Random Search
 - c) Heuristic Search
 - d) Stratified Search
63. Simplest way of deadlock recovery is
- a) Roll back
 - b) Preempt resource
 - c) Lock one of these processes
 - d) Kill one of the processes
64. Which statement is not true about process 0 in the Unix operating system?
- a) Process 0 is called init process.
 - b) Process 0 is not created by fork system call.
 - c) After forking process 1, process 0 becomes swapper process.
 - d) Process 0 is a special process created when system boots.
65. The essential difference between traps and interrupt is
- a) traps are asynchronous and interrupt are synchronous with the program
 - b) traps are synchronous and interrupt are asynchronous with the program
 - c) traps are synchronous and interrupt are asynchronous with the I/O devices.
 - d) None of these

66. The hexadecimal equivalent of the octal number 2357 is:

- a) 2EE
- b) 2FF
- c) 4EF
- d) 4FE

67. Which of the following is true for computation time in insertion, deletion and finding maximum and minimum element in a sorted array?

- a) Insertion- $O(1)$, Deletion- $O(1)$, Maximum- $O(1)$, Minimum- $O(1)$
- b) Insertion- $O(1)$, Deletion- $O(1)$, Maximum- $O(n)$, Minimum- $O(n)$
- c) Insertion- $O(n)$, Deletion- $O(n)$, Maximum- $O(1)$, Minimum- $O(1)$
- d) Insertion- $O(n)$, Deletion- $O(n)$, Maximum- $O(n)$, Minimum- $O(n)$

68. The seven elements A, B, C, D, E, F and G are pushed onto a stack in reverse order, i.e., starting from G. The stack is popped five times and each element is inserted into a queue. Two elements are deleted from the queue and pushed back onto the stack. Now, one element is popped from the stack. The popped item is

- a) A
- b) B
- c) F
- d) G

69. In link state routing algorithm after the construction of link state packets, new routes are computed using:


- a) DES algorithm
- b) Dijkstra's algorithm
- c) RSA algorithm
- d) Packets

70. Consider the following assembly language instructions:

```
mov al, 15
mov ah, 15
xor al, al
mov cl, 3
shr ax, cl
add al, 90H
adc ah, 0
```

What is the value in ax register after execution of above instructions?

- a) 0270H
- b) 0170H
- c) 01E0H
- d) 0370H


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71. In a paging system, it takes 30 ns to search translation Look-aside Buffer (TLB) and 90 ns to access the main memory. If the TLB hit ratio is 70%, the effective memory access time is:
- a) 48 ns
 - b) 147 ns
 - c) 120 ns
 - d) 84 ns
72. Which of the following cannot be passed to a function in C++?
- a) Constant
 - b) Structure
 - c) Array
 - d) Header file
73. Which of the following storage classes have global visibility in C/C++?
- a) Auto
 - b) Extern
 - c) Static
 - d) Register
74. The combination of IP Address and a port number is known as -----
- a) network number
 - b) socket address
 - c) subnet mask number
 - d) MAC address
75. Cycle stealing is associated with.....
- a) Data transfer among registers
 - b) DMA
 - c) Pipelining
 - d) Microprogramming
76. A CPU has 16 bit program counter. It can address
- a) 16K Memory locations
 - b) 32K Memory locations
 - c) 64K Memory locations
 - d) 256K Memory locations
77. BCD stands for
- a) Binary Coded Decimal
 - b) Boolean Code Definition
 - c) Binary Coded Division
 - d) None of the above
78. An attempt to execute illegal or undefined instruction may lead to
- a) I/O Interrupt
 - b) Trap event

- c) CPU malfunctioning
- d) None of the above

79. Interrupts which are initiated by an instruction are.....

- a) Internal
- b) External
- c) Hardware
- d) Software

80. Parallel processing may occur.....

- A. In the instruction stream
- B. In the data stream
- C. Both A and B
- D. None of the above

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Answerkey - Technical Assistant (Instruments) - Networking
Services Division

1. b	24. c	47. c	70. a
2. c	25. c	48. c	71. b
3. b	26. c	49. b	72. d
4. b	27. b	50. b	73. b
5. a	28. b	51. a	74. b
6. d	29. d	52. b	75. b
7. d	30. a	53. d	76. c
8. c	31. d	54. c	77. a
9. b	32. b	55. a	78. b
10. b	33. b	56. b	79. d
11. a	34. c	57. b	80. C
12. b	35. c	58. b	
13. d	36. d	59. a	
14. d	37. a	60. c	
15. b	38. a	61. a	
16. d	39. b	62. c	
17. a	40. c	63. d	
18. d	41. a	64. a	
19. a	42. a	65. b	
20. a	43. b	66. c	
21. c	44. d	67. c	
22. b	45. b	68. b	
23. c	46. c	69. b	

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