MCA

1. If a 1Gb file is to be transmitted over a 10Mbps link, how much time would it take to complete the transmission?
   A) 10 seconds
   B) 100 seconds
   C) 1000 seconds
   D) 1024 seconds

2. Which one of the following sentences most accurately defines the meaning of the term *scope of a variable*?
   A) The range of values that a variable may assume.
   B) The set of variables to which the given variable can meaningfully be assigned.
   C) The portion of the code in which a variable is meaningful.
   D) The set of variables from which the given variable can meaningfully assume values.

3. What would be displayed, if the following program is compiled and run?

```
main(){
   float a=0.7;
   if(a==0.7)   printf(" a is 0.7 \n");
   else printf("a is not equal to 0.7\n");
}
```

   A) a is 0.7
   B) a is not equal to 0.7
   C) Run time error message
   D) Compile time error message

4. What will be the value of the variable sum after execution of the following C program segment completes?

```
int  sum=1; index=9;
do{
      index=index-1;
      sum=2*sum;
  } while(index>9);
```

   A) Overflow
   B) Infinite
   C) 9
   D) 2

5. 1 Petabyte is how many bits?
   A) 8×2^{50} bits
   B) 2^{50} bits
   C) 8×2^{40} bits

D) 2^{40} bits

6. What would the number $(0011100011110000)_2$ be in base 16 form?
   A) 38F0
   B) 19E8
   C) E1BD
   D) 3AE0

7. When two n bit binary numbers are added, the sum will contain at the most how many bits?
   A) n bits
   B) n+1 bits
   C) n+2 bits
   D) n+n bits

8. Which of the following circuits can be used to store one bit of data?
   A) Encoder
   B) OR gate
   C) Flip Flop
   D) Decoder

9. What would be the output of the following C program?

```
main ( ){
        int x = 2, y = 5;
        if (x < y) return (x = x+y); else printf ("%d:",x);
        printf("%d:",y);
}
```

   A) 2:
   B) 5:
   C) 7: 5:
   D) No output would be produced

10. What would be the output produced by the following program?

```
main (){
        int d = 1;
        do
                printf("%d\n", d++);
        while (d < = 6);}
```

   A) 1 2 3 4 5 6 7 8
   B) 2 3 4 5 6 7 8
   C) 1 2 3 4 5 6
   D) 1 2 3 4 5 6 7

11. Which of the following C instructions is the odd one out?
   A) j= j + 1;
   B) j =+ 1;
   C) j++;
   D) j+= 1;

12. What would be the value of d at the end of execution of the following C code segment?

```
int a=7,b=12,c=5,d;
```

```
d= 2 * b-c/3+ a/b
```

A) 23
B) 6
C) 25
D) 8

13. In a C program, main ( ) is a
A) Function
B) Data structure
C) Header
D) Statement

14. In a C program, suppose the condition part of a for loop is missing. Then which one of the following would be implicitly assumed about this missing for loop conditional?
A) It is assumed to be present and taken to be false.
B) It results in the compiler reporting a syntax error.
C) It is assumed to be present and taken to be true.
D) Execution will be terminated abruptly.

15. What would be the output of following C statement?

```
for(i=1; i<4; i++)
        printf("%d",(i%2) ? i : 2*i);
```

A) 1 4 3
B) 1 2 3
C) 2 4 6
D) 2 2 6

16. What would be displayed corresponding to the following C code snippet?

```
char ch[6]={'e', 'n', 'd', '\0', 'p'};
printf("%s", ch);
```

A) endp
B) end0p
C) end
D) error

17. What would be the values of the variables x,y,z, after the following C program statements have been executed?

```
int x = 6, y=8, z, w;
y = x++;
z = ++x;
```

A) y=8, z=8, x=6
B) y=9, z=7, x=8
C) y=7, x=8, z=7
D) y=6, x=8, z=8

18. Which of the following is the correct declaration in C for an array S to hold a character string of length 5?
A) char S[5];
B) string S[5];
C) char S[6];
D) string S[6];

19. Which one of the following devices can be used in a data communication network to perform the conversion between analogue and digital signals?
A) Front end processor.
B) Modem.
C) Decoder.
D) Multiplexer

20. Which of the following is not an image data file format standard?

A) MPG
B) JPG
C) GIF
D) BMP

21. Which of the following is an important factor contributing to the high noise immunity of a coaxial cable?
A) Inner conductor
B) Diameter of the cable
C) Outer conductor
D) Insulating material

22. In computers, subtraction is generally carried out by which of the following types of arithmetic?
A) 9's complement
B) 10's complement
C) 1's complement
D) 2's complement

23. What are the typical capacities of (i) main memory and (ii) hard disk of a modern desktop PC?
A) 128KB and 50GB
B) 256MB and 50GB
C) 50GB and 256MB
D) 2GB and 500GB

24. What is the binary representation of 0.125?
A) 0.11
B) 0.01
C) 0.001
D) 0.011

25. The Internet is an example of which one of the following types of networks?
A) Circuit-switched network
B) Packet-switched network
C) PSTN network
D) Cell-switched network

26. What would be the Hexadecimal number equivalent of the Octal number 127?
A) 057
B) 05A
C) 1AE
D) 0A7

27. What would be the decimal equivalent of the binary number 101.101?
A) 5.6249
B) 5.625
C) 5.505
D) 5.25

28. The method of communication in which transmission takes place in both directions, but only in one direction at a time, is called:
A) Simplex

B) Full duplex
C) Simple duplex
D) Half duplex

29. In which protocol, packets of the same session may be routed through different paths?
A) TCP only
B) Both TCP and UDP
C) UDP only
D) Neither in TCP nor in UDP

30. The main memory in a Personal Computer (PC) is made of which one of the following types of memory?
A) Hard disk
B) Static RAM
C) Dynamic RAM
D) CD-ROM.

31. Which one of the following types of memory of a computer is the fastest?
A) Register
B) Cache
C) RAM
D) Hard disk

32. Zero has two representations in which of one the following encodings?
A) Sign magnitude
B) 1's complement
C) 2's complement
D) ASCII

33. What does "Zipping" a file mean?
A) Encrypting it
B) Decrypting it
C) Transmitting it
D) Compressing it

34. What is the 1's complement representation of $(10011101)_2$?
A) 01100010
B) 10011110
C) 01100001
D) 01100011

35. What would be the representation of the number $(1\ 1\ 1\ 0\ 0\ 1)_2$ in base 10?
A) 22
B) 39
C) 57
D) 114

36. What is the 9's complement of $(0.3267)_{10}$?
    A) 47.479
    B) 0.6352
    C) 0.6732
    D) 1.4563

37. Which one of the following is an example of an Optical Storage device?
    A) Magnetic Tapes
    B) USB Disk
    C) Floppy Disk
    D) DVD

38. HTML stands for:
    A) Hyper Text Make up Language
    B) Hyper Terminal Mark up Language
    C) Hyper Text Mark up Language
    D) Higher Text Mark up Language

39. In which one of the following units is the resolution of a graphics screen expressed?
    A) Megabits
    B) Hz
    C) pixels
    D) Length of diagonal in cm

40. Which one of the following is an important advantage of dial-up-internet access?
    A) It utilizes broadband technology
    B) It utilizes existing telephone service
    C) It uses a router for security
    D) It provides Gigabit communication link

41. Which of the following characterizes an important difference between application and system software?
    A) Application software is composed of program instructions but system software is not.
    B) Application software is stored in memory whereas system software is stored only in the CPU.
    C) System software is unnecessary whereas application software must be present on the computer.
    D) System software manages hardware whereas application software performs user tasks.

42. Which one of the following terms refers to a computer that provides resources to other computers in a network?
    A) Server.
    B) Mainframe.
    C) Platform.
    D) Client.

43. Which one of the following operating systems was initially created in the early 1970s at AT&T's Bell Labs, USA?
    A) Linux
    B) DOS
    C) Unix
    D) GNU

44. Which one of the following provides the closest characterization of a Trojan horse?
    A) A program that overtly does one thing while covertly doing another
    B) A program that spreads infection from one computer to another.
    C) A program that corrupts the data of the infected computer
    D) A virus that erases the data files of the infected host.

45. Which of the following storage media provides sequential access only?
    A) Floppy disk
    B) Magnetic tape
    C) Magnetic disk
    D) Optical disk

46. Which one of the following devices has the limitation that we can only store information to it but cannot erase or modify it?
    A) Floppy Disk
    B) Hard Disk
    C) Tape Drive
    D) CDROM

47. Ink-jet printers can be classified under which of the following classes of printers?
    A) Impact printers
    B) Laser printers
    C) Non-impact printers
    D) Optical printers

48. What would be the result of the multiplication of the following two binary numbers: 10001 × 101 ?
    A) 101101
    B) 1010101
    C) 100101
    D) 101010

49. Which one of the following classes of errors can be detected and reported by compilers?
    A) Syntax error
    B) Semantic error
    C) Logical error
    D) Run-time error

50. Who was the inventor of mechanical calculator for adding numbers?
    A) Charles Babbage
    B) Peano
    C) Newton
    D) Pascal

51. Transistors are associated with which generation of computer systems?
    A) First generation
    B) Fifth generation
    C) Second generation
    D) Fourth generation

52. Which one of the following terms denotes the loading of operating system into the memory of a personal computer during start up?
    A) Interrupting
    B) Booting
    C) Prompting
    D) Paging

53. A file is of size 10 KBytes. What is the size of the file in bits?
    A) 10,000
    B) 81,920
    C) 10,240
    D) 80,240

54. Which of the following C statements would interchange the values of the integer variables a and b after execution?
    A) a=b; b=a;
    B) a=a*b; b=a/b; a=a/b;
    C) a=a+b; b=a-b; a=a-b;
    D) a=a+b; b=a-b; a=b-a;

55. Which of the following most accurately describes the Internet?
    A) LAN
    B) WAN
    C) Metropolitan Area Network
    D) Ethernet

56. The expression !((x > y) && (y <= 3)) is equivalent to which of the following?
    A) (x > y) && (y <= 3)
    B) (x < y) || (y >= 3)
    C) (x < =y) || (y >3)
    D) (x <= y) && (y > 3)

57. For the following C program, how many times is the for loop executed?

```
main(){
   int i;
      for(i=0;i<10;)
         printf("loop count = %d\n", i);
   }
```

A) 9
B) 10
C) 11
D) Infinite number of times

58. What would be the value of the variable x after the execution of the following program segment completes?

```
x=-5; y=10;
if(x>y)
if(x<0)  x=x*-1;
else x=2*x;
```

A) -5
B) -10
C) 5
D) -20

59. What will be printed when the following function is called with the parameters 75 and 35?

```
void fun(int x, int y){
        while(x!=y)
                if(x>y) x-=y;
                else y-=x;
        printf("%d\n",x);
}
```

A) 5
B) 75
C) 35
D) 525

60. The size of a RAM is 64Mb. How many words of 8 bits can it store?

A) 8,000,000
B) 8,00,000
C) 8,368,608
D) 8,368,000

Answer Key

1 B		21 C		41 D
2 C		22 D		42 A
3 B		23 D		43 C
4 D		24 C		44 A
5 A		25 B		45 B
6 A		26 A		46 D
7 B		27 B		47 C
8 C		28 D		48 B
9 D		29 C		49 A
10 C		30 C		50 D
11 B		31 A		51 C
12 A		32 A		52 B
13 A		33 D		53 B
14 C		34 C		54 C
15 A		35 C		55 B
16 C		36 C		56 C
17 D		37 D		57 D
18 C		38 C		58 A
19 B		39 C		59 A
20 A		40 B		60 C