PROGRAMMING LANGUAGE 'C'

1.
```
main()
{
        int a=4,b=2;
        a=b<<a + b>>2;
        printf("%d", a);
}
```
a) 32 b) 2 c) 4 d) none

2.
```
main()
{
        int *ptr=(int*)malloc(sizeof(int));
        *ptr=4;
        printf("%d",(*ptr)+++*ptr++);
}
```
a) 7 b) 9 c) Runtime error d) none

3.
```
#define MAX 3
main()
{
        printf("MAX = %d \n",MAX );
        #undef MAX
        #ifdef MAX
        printf("Vector Institute");
        #endif
}
```
a) MAX=3, Vector Institute b) MAX=3 c) Vector Institute
d) Compile time error

4.
```
int array[]={1,2,3,4,5,6,7,8};
#define SIZE (sizeof(array)/sizeof(int))
main()
{
        if(-1<=SIZE) printf("1");
        else printf("2");
}
```
a) 1 b) 8 c) 2 d) 4

5.
```
main()
{
        int ptr[] = {1,2,23,6,5,6};
        printf("%d",&ptr[3]-&ptr[0]);
}
```
a) 1 b) 2 c) 4 d) none

6.
```
main()
{
        char input[] = "SSSWILTECH1\1\1";
        int i, c;
        for ( i=2; (c=input[i])!='\0'; i++) {
        switch(c) {
        case 'a': putchar ('i'); continue;
        case '1': break;
        case 1: while (( c = input[++i]) != '\1' && c!= '\0');
        case 'E': case 'L': continue;
        default: putchar(c);continue;
        }
        putchar(' ');
        }
        putchar('\n');
}
```
a) SWITCH b) SSWILI c) SIEH1 d) compile time error

7.
```
main()
{
        int a[3][4] ={1,2,3,4,5,6,7,8,9,10,11,12} ;
        int i, j , k=99 ;
        for(i=0;i<3;i++)
        for(j=0;j<4;j++)
        if(a[i][j] < k) k = a[i][j];
        printf("%d", k);
}
```
a) 7 b) 9 c) 3 d) 1

8.
```
main()
{
        char p[] = "hello world!";
        p = "vector";
        printf("%s",p);
}
```
a) vector b) hello world! c) hello world! vector d) none

9.
```
main()
{
        enum _tag{ left=10, right, front=100, back};
        printf("%d, %d, %d, %d", left, right, front, back);
}
```
a) 10,0,1,2 b) 10,11,100,102 c) 0,1,2,3 d) none

10.
```
main()
{
        char as[] = "\\0\0";
```

```
        int i = 0;
        do{
        switch( as[i++]) {case '\\' : printf("A");
        break;
        case 0 : printf("B");
        break;
        default : printf("C");
        break;
        }
        }while(i<3);
}
```

a) ACB b) ACBC c) BCA d) CBAC

11.
```
main()
{
        FILE *fs;
        char c[10];
        fs = fopen("source.txt", "r"); /* source.txt exists and contains "Vector Institute" */
        fseek(fs,0,SEEK_END);
        fseek(fs,-3L,SEEK_CUR);
        fgets(c,5,fs);
        puts(c);
}
```

a) ute b) itute c) tute d) none

12.
```
main()
{
        int a=10,b;
        b=a>=5?100:200;
        printf("%d\n",b);
}
```

a) 10 b) 5 c) 100 d) 200

13.
```
main()
{
        extern int i;
        i =20;
        printf("%d\n",sizeof(i));
}
```

a) 2 b) 4 c) 1 d) none

14.
```
main()
{
        int i = 10;
        printf(" %d %d %d \n", ++i, i++, ++i);
}
```

a) 11 11 13 b) 13 11 11 c) 11 12 13 d) 13 12 11

15.
```
main()
{
        unsigned int k = 987 , i = 0;
        char trans[10];
        do {
        trans[i++] =(char) (k%16 > 9 ? k%16 - 10 + 'a' : '\0' );
        } while(k /= 16);
        printf("%s\n", trans);
}
```
a) bd b) cf c) eg d) none

16.
```
main()
{
        struct test
        {
        char c;
        int i;
        char m;
        } t1;
        printf("%d %d\n", sizeof(t1), sizeof(t1.c));
}
```
a) 4 1 b) 6 2 c) 4 2 d) none

17.
```
main()
{
        printf("%x",-1<<4);
}
```
a) FF00 b) FFFF c) FFF0 d) Compile time error

18.
```
main()
{
        int var1=12, var2=35;
        printf("%d",max(var1,var2));
}
int max(int x, int y)
{
        x>y? return x: return y;
}
```
a) 12 b) 35 c) compile time error d) run time error

19.
```
main()
{
        int x, arr[8]={11,22,33,44,55,66,77,88};
        x=(arr+2)[3];
        printf("%d",x);
}
```

a) 33 b) 66 c) 44 d) 77

20.
```
struct tag{
auto int x;
static int y;
};
main()
{
        struct tag s;
        s.x=4;
        s.y=5;
        printf("%d",s.x);
}
```
a) 4 b) 5 c) 9 d) none

DIGITAL

21. A Bipolar transistor has a total of
a) Two similarly doped regions b) Three alternatively doped regions
c) Two alternatively doped regions d) Three similarly doped regions

22. Which transistor current formula is correct
a) $I_C=I_B+I_E$ b) $I_B=I_C+I_E$ c) $I_E=I_B-I_C$ d) $I_B=I_E-I_C$

23. BJT is a_____
a) Voltage controlled device b) rectifier
c) current controlled device d) inverter

24. The sum of binary formats 10101010 and 01111 is __
a) 128 b) 271 c) 200 d) 252

25. Which type of error was eliminated through the use of gray code
a) timing b) decoding c) encoding d) conversion

26. If a parity bit is added to a four bit word, how many output lines will be required after multiplexing ?
a) 5 b) 1 c) 7 d) 9

27. In a 100KHz four-stage frequency divider, if the CLEAR input to stage two is LOW, what will be the fourthstage output frequency ?
a) 50 KHz b) 12.5 KHz c) 0.0KHz d) 25 KHz

28. How many clock pulses required to load 4-bit SIPO register and transfer the data to a output register.
a) 16 b) 8 c) 5 d) 4

29. Which type of device may be used to interface a parallel data format with an external equipments serial format ?

a) Key matrix b) Memory chip c) UART d) SIPO

30. If 00000111 in a register is shifted to read 00111000, the arithmetic operation is
a) X2 b) X4 c) X16 d) X8

Micro Processor (8085/8086): (Select either [ ] 8085 / [ ] 8086)
8085:

31. The 8085 microprocessor is an ___ bit microprocessor. It is a _____ pin IC.
a) 8 , 20 b) 16 , 40 c) 16 , 20 d) 8 , 40

32. The following are true about 8085 except that, _____.
a) It is manufactured by using NMOS technology
b) It is having on-chip clock generation facility
c) It has 8 address lines
d) Lower order address bus is multiplexed with data bus

33. The status register or flag register of 8085 include _____ flags.
a) 3 b) 5 c) 7 d) 9

34. The data conditions, after execution of an arithmetic or logical operations are indicated by setting or resetting the _____ called flags.
a) Flip-flops b) latches c) registers d) gates

35. Address Latche Enable(ALE) signal is used to de-multiplex _____ and _____ buses.
a) Address , data b) Address, control c) Data,control d) None of the above

36. SID and SOD signals are used _____.
a) For Serial communication b) For DMA operation
c) By slow operating peripherals d) None of the above

37. In the 8085, the machine cycle may consists of _____ to _____ T-states.
a) 2, 4 b) 3,6 c) 2,8 d) 3,8

38. The 8085 instruction cycle consists of one to five machine cycles.The first machine cycle of each instruction cycle is always _____ machine cycle.
a) I/O read b) I/O write c) Memory read d)None of the above

39. The _____ instruction is Machine control instruction.
a) HLT b) PUSH c) IN d) LDA

40. The number of ways in which the operand information is specficied in the instruction code are _____.
a) 4 b) 5 c) 12 d) 24

41. The data bus of any microprocessor is always

a) Unidirectional b) Bi-directional c) Either unidirectional or bi-directional
d) None of the above

42. In a microprocessor based system, the stack is always in
a) Microprocessor b) RAM c) ROM d) EPROM

43. In 8085 microprocessor ,the I/O devices can be used in
a) Memory mapped I/O only b) I/O mapped I/O only
c) Memory mapped I/O or I/O mapped I/O d) None of the above

44. In 8085 micprocessor,in response to RST 7.5 interrupt the execution is transferred to memory location.
a) 0000H b) 002CH c) 0034h d) 003CH

45. Which of the data transfer is not possible in 8085 microprocessor ?
a) Memory to accumulator b) Accumulator to memory
c) Memory to memory d) I/O device to accumulator

46. _____type of ADC is the fastest type of ADC.
a) Flash b) Counter c) Dual slope
d) Successive approximation

47. The number of comparators in a 4-bit flash type ADC is _____ .
a) 4 b) 5 c) 15 d) 16

48. An ADC is usually considered as an _____.
a) Encoder b) Decoder c) Tri-State Logic d) None of the mentioned

49. The resolution of a 4 bit counting ADC is 0.5 volts. For an analog input of 6.6 volts,the digital output of the ADC will be _____ .
a) 1011 b) 1101 c) 1100 d) 1110

50. There are _____ types of DAC's avaible.
a) 2 b) 3 c) 4 d) 5

8086:

31. What is the maximum clock frequency in 8086?
a) 4MHz b) 5MHz c) 6MHz d)7MHz

32. Size of the IP reg in 8086 is------
a) 8 bits b) 16 bits c) 20 bits d) 24 bits

33. ------register can be changed directly using POP instruction
a) ss b) es c)ds d) cs

34. SIM is----------
a) serial interrupt mask. b) set interrupt monitor
c) set interrupt mask d) serial interrupt monitor

35. What is the size of the instruction queue?
a) 4 bytes b) 6 bytes c) 8 bytes d) 2 bytes

36. What is the size of each segment in 8086?
a)12kb b) 32kb c) 64kb d)128kb

37. Which micro processor accepts the program written for 8086 with out any changes
a) 8085 b) 8087 c) 8088 d) 80286

38. Which are the basic parts of 8086?
a) BIU b) EU c) pipelining d) a and b

39. 8086 is -------bit microprocessor?
a)8 b)16 c)20 d) 24

40 Among all which one is co –processor for 8086?
a) 8085 b) 8087 c) 8088 d) 80286

41. How many general purpose registers available in 8086?
a) 4 b) 8 c) 10 d) none

42. ----------reg (in 8086)contains the address of the next instruction to be fetched?
a) bp b) sp c) pc d) ip

43. Which Segment is used to store interrupt and subroutine return address registers.
a) ss b) es c) ds d) cs

44. Which Flag can be set or reset by the programmer and also used to control the operation of the processor?
a) trace b) interrupt c) direction d) all

45. Give example of maskable interrupt?
a) RST 7.5 b) RST 6.5 c) TRAP d) a and b

46. MOV Cx, 1234H instruction belongs to which addressing mode ?
a) Register b) memory c) direct d) Immediate

47. 8086 instructions varied from ---------- to ---------- bytes ?
a) 1 to 2 bytes b) 1 to 3 bytes c) 1 to 4 bytes d) none

48. 8086 prefetches only when at least ---------- bytes are free in queue.
a) 4 b) 3 c) 2 d) 1

49. An RS-232 interface is
a) a parallel interface b) a serial interface c) printer interface
d) a modem interface

50. 8086 has ---------- flag signals.
(a) 3 b) 5 c) 7 d) 9

APTITUDE:

51. A train passes a station platform in 36 seconds and a man standing on the platform in 20 seconds. If the speed of the train is 54 km/hr, what is the length of the platform?
a) 120 m b) 240 m c) 300 m d) none of these

52. In one hour, a boat goes 11 km/hr along the stream and 5 km/hr against the stream. The speed of the boat in still water (in km/hr) is:
a) 3 km/hr b) 5 km/hr c) 8 km/hr d) 9 km/hr

53. If x=y=2z and xyz=256 then what is the value of x?.
a)12 b)4 c)16 d)6

54. Pipe A can fill a tank in 20 minutes and Pipe B in 30 mins and Pipe C can empty the same in 40 mins.If all of them work together, find the time taken to fill the tank.
a) 17 1/7 mins b) 20 mins c) 8 mins d) none of these

55. There is an element which triplicates in every hour. Each of these 3 items in turn reproduce exactly 3 other items. If a single compound is kept in a container at noon and the container is full by midnight. At what time is the container 1/3 full.

a) 4pm b) 6pm c) 9pm d) 11pm

56. Mr. Shah decided to walk down the escalator of a tube station. He found that if he walks down 26 steps, he requires 30 seconds to reach the bottom. However, if he steps down 34 stairs he would only require 18 seconds to get to the bottom. If the time is measured from the moment the top step begins to descend to the time he steps off the last step at the bottom, find out the height of the stair way in steps?

a) 18 steps b) 25 steps c) 46 steps d) 32 steps

57. What is the missing number in this series? 8 2 14 6 11 ? 14 6 18 12.

a) 7 b) 5 c) 9 d) 10

58. Can you find out what day of the week was January 12, 1979?
a) Friday b) Saturday c) monday d) Wednesday

59. A person walking 5/6 of his usual rate is 40 minutes late. What is his usual time?

a) Rs.17.40 per kg. b) Rs. 24.35 per kg. c) Rs. 12.46 per kg d) Rs. 22.15 per kg

60. A garrison of 3300 men has provisions for 32 days, when given at a rate of 850 grams per head. At the end of 7 days a reinforcement arrives and it was found that now the provisions will last 8 days less, when given at the rate of 825 grams per head. How, many more men can it feed?

a) 1540 men b) 1250 men c) 1700 men d) 250 men

61. The sum of a number and the number preceding it is 33. By how much is two less than six times the number?
a) 196 b) 94 c) 90 d) 100

62. If the length and breadth of a room are increased by y feet each, the perimeter increases by 16 feet. Find y
a) 8 b) 2 c) 6 d) 4

63. One-fourth of a number is greater than one-fifth of the number succeeding it by 1. Find the number.
a) 24 b) 42 c) 36 d) 48

64. An oil cylinder was 3/4th full. When two bottles of oil is poured into it, it is 4/5th full. How many bottles of oil can the full cylinder hold?
a) 20 b) 15 c) 40 d) 30

65. The ratio of present age of A and B is 4:3. A will be 26yrs old in 6yrs from now. How old is B now?
a) 15yrs b) 20yrs c) 25yrs d) 10yrs

66. A profit of Rs. 500 is divided between X and Y in the ratio of ½ : ⅓ .What is the difference between their profit shares ?
a) Rs. 200 b) Rs. 100 c) Rs. 300 d) Rs. 50

67. The sum of the present ages of A, B, C is 45 yrs. Three years ago their ages were in the ratio 1:2:3. What is the present age of A
a) 10yrs b) 6yrs c) 8yrs d) 9yrs

68. If the denominator of a fraction is increased by 4, then the fraction becomes 5/8. If the numerator is 11 less than the denominator, find the numerator.
a) 25 b) 20 c) 30 d) 35

69. 15-mangoes and 7-apples cost as much as 10-mangoes and 9-apples. What is the ratio of cost of one mango to cost of one apple?
a) 2:5 b) 5:2 c) 3:4 d) Cannot be determined

70. A person sold his watch for 96 $ and got some percentage of profit which was numerically equal to the cost price. What is the cost price of the watch
a) 50 $ b) 54 $ c) 60 $ d) 80 $

71. Tap A can fill an empty tank in 6-hours and Tap B can empty the full tank in 8-hours. If the tank is empty when tap A is opened at 9:00 am and tap B is opened at 11:00 am, then at what time is the tank filled?
a) 6:00pm b) 3:00 am c) 3:00pm d) 6:00am

72. 20 men can plant 50 saplings in 8-hours. In how many hours can 15men plant 80 saplings?
a) $17\ 1/25$ b) $12\ 7/11$ c) 20 d) None of these

73. A man can row at 6 km/h in still water and at 4 km/h upstream. How long will the man take to go to a place 1 km downstream and return?
a) 36 min b) 24 min c) 12 min d) 18min

74. Some telegraph poles are placed 20 m apart. How many poles will a train pass in 3-hours at 60km/h ?
a) 1200 b) 2500 c) 4000 d) 9000

75. The square of a two digit number is divided by half the number. After 36 is added to thequotient, this sum is then divided by 2. The digits of the resulting number are the same as those in the original number, but they are in reverse order. The ten's place of the original number is equal to twice the difference between its digits. What is the number?
a) 38 b) 46 c) 27 d) 75