NATIONAL INSTITUTE OF BUSINESS MANAGEMENT
BSc (Hons) Computing|ITB|EHN|Year-1
DIPLOMA IN SOFTWARE ENGINEERING |NETWORK ENGINEERING 19.1P
PROGRAMMING FUNDAMENTALS NIB-SOC-COM-1-3-03

Time allowed: Two hours **27-07-2019**

Instructions to candidate:

- **Paper consists of four questions.**
- **Answer all the questions.**

1.

a. The shop selling different items to customer issues bills. There are two bill types as A and Discount rate is depends on bill type. Draw a flow chart to input Bill Type, Bill amount and output discount amount of the bill. (15 Marks)

Bill Type	Discount Rate (%)
A	5%
B	8%

b. A private electricity company provides electricity for the houses in the area. Draw a flow chart to input number of electricity bill units used in each month of the year by a house holder and output average number of units used in the year by the house holder. (15 Marks)

2.

a. A bank uses money deposit machine to collect deposits done by their customers. Write a pseudo code to input value of each deposited cash note into the cash deposit machine by a customer and output total cash value deposited by a customer when dummy value -100 is input for value of deposited cash note (15 Marks)

b. The department of meteorology has decided to use software application for their daily operations. Write a pseudo code to input temperature values (Celsius) of 10 cities in to an array and output number of cities which temperature value is greater than 30(Celsius). (15 Marks)

3.

a. What is an array in programming? (03 Marks)
b. Differentiate call by value and call by reference? (03 Marks)
c. What is a function in programming? (03 Marks)
d. Write C statement/s for following.
   i. Declare character variable (02 Marks)
   ii. Multiply values of X and Y (02 Marks)
   iii. Decrement value of F by 1 and divide it by 5. . (02 Marks)
   iv. Add value of P and Q and increment Q by 1 (02 Marks)
e. What is the output of W according to operator precedence, (03 Marks)
   W=50-10*2+100-(10*5)

4. Find the outputs of following programs.

a.
```
main()
{   int a,b=0;
    for(a=5;a<=7;a++)
    {       for(b=3; b<=5;b++)
            { printf("%d\t%d\n",a,b);
            }
    }
    return 0;
}
```
(4 Marks)

b.
```
main()
{   int m,n;
    for (m=1; m<=3; m++)
    {       for (n=1; n<=4; n++)
            {       if(n==2)
                        break;
            }
            printf("%d\n",m*n);
    }
    return 0;
}
```
(4 Marks)

c.
```
main()
{   int A;
    A=80;
    switch(A*2)
    {   case 80:
            printf("P");
            break;
        default:
            printf("Q");
    }return 0;
}
```
(4 Marks)

d.
```
void set(int E)
{    E=80;
}
main()
{  int r=40;
   set(r);
   printf("%d",r);
   return 0;
}
```
(4 Marks)

e.
```
main()
{int g, h=1;
        do
        {  for(g=1;g<=3;g++)
           {   printf("%d\n",g+h);
           }
           ++h;
        }
        while(h<=1);
    return 0;
}
```
(4 Marks)