

Total No. of Questions : 5]

SEAT No. :

P1381

[Total No. of Pages : 3

[5623]-1001

F.Y: B.Sc.

COMPUTER SCIENCE

**CS - 111 : Problem Solving Using Computer and 'C' Programming
(CBCS) (2019 Pattern) (Semester - I) (Paper - I)**

Time : 2 Hours]

[Max. Marks : 35

Instructions to the candidates:

- 1) *Q.1 is compulsory.*
- 2) *Solve any three questions from Q.2 to Q.5.*
- 3) *Questions 2 to 5 carry equal marks.*

Q1) Attempt any five of the following :

[5 × 1 = 5]

- a) While loop is entry controlled loop. State true or false.
- b) What is difference between getchar and gets?
- c) Write a pseudocode to check number is positive or negative.
- d) What is recursive function?
- e) Array is homogeneous data structure. Justify.
- f) Write a pseudocode to find out addition of first 20 numbers and print it.

Q2) a) Attempt any two of the following :

[2 × 3 = 6]

- i) Explain for loop with the help of suitable example.
- ii) Explain automatic and external storage class.

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iii) What is the output of following C code? Justify.

```
Void main()  
{  
    int i = 1;  
    while (i <= 13)  
    {  
        Printf("%d\t", i);  
        i = i + 2;  
    }  
}
```

b) Write a C program to accept a number & find out reverse of a number. [1 × 4 = 4]

Q3) a) Attempt any two of the following : [2 × 3 = 6]

i) Explain different notations used in flowchart.

ii) Explain following operators

1) Increment and decrement.

2) Relational.

iii) What is the output of following C code? Justify.

```
main()  
{  
    int x, y, answer;  
    x = 10;  
    y = 20;  
    answer = predict (x, y+2);  
    printf("%d", answer);  
}  
int predict (int a, int b)  
{  
    int temp;  
    temp = 10 + a * b;  
    return temp;  
}
```

b) Write a C program to accept 'n' numbers into array and find out maximum and minimum number from array. [1 × 4 = 4]

Q4) a) Attempt any two of the following :

[2 × 3 = 6]

- i) Explain built-in data types.
- ii) Explain the use of break and continue.
- iii) What is output of following C code? Justify.

```
main()
{
    int a[5] = {5, 1, 15, 20, 25};
    int i, j, m;
    i = ++a[1];
    j = a[1]++;
    m = a[i++];
    printf("%d %d %d", i, j, m);
}
```

- b) Write a C program to find out factorial of a number using user defined function. **[1 × 4 = 4]**

Q5) Attempt any two of the following :

[2 × 5 = 10]

- a) Explain the types of array.
- b) Explain row major and column major ordering.
- c) Write an algorithm and draw flowchart to find out sum of digits of a number.

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