SEM 2 – 3 (RC 16-17)

F.E. (Semester – II) (RC 2016-2017) Examination, Nov./Dec. 2018
PROGRAMMING LANGUAGES

Duration : 3 Hours | Total Marks : 100

Instructions *: 1) Answer* ***any 5*** *questions by selecting* ***two*** *questions from Part – **A** , **two** questions from Part – **B** and **one** question from Part – **C**.*
2) Make suitable assumptions ***if required.***

PART – A

Answer **any two** questions from the following : **(2×20=40)**

Question – 1 **20**

a) Differentiate between Imperative and Functional style of programming. **4**

b) Devise an algorithm and draw a flowchart to count the number of even and odd numbers from the given set of numbers. **6**

c) Describe the elements of C function with the help of an example. What are the advantages of using functions ? **6**

d) Explain the concept of a 'for' loop with the help of an example. **4**

Question – 2 **20**

a) Write a C program to reverse a given number. **6**

b) Find the output of the following codes : **4**

```
#include<stdio. h>
int main()
{
    int x=4, y, z;
    y = – –x;
    z = x– –;
    printf("%d, %d, %d\n", x, y, z);
    return 0;
}
```

```
#include<stdio.h>
int main()
{
    int  i = 0, j = 0;
    while (i<5 && j<10)
    {
        i++;
        j++;
    }
    printf("%d %d", i, j);
}
```


P.T.O.

c) Differentiate between iteration and recursion. Write a recursive program to find the power of a given number (example input : 4,3; output : 64). 6

d) What do you mean by parameter passing ? Differentiate between call by values and call by reference methods. 4

Question – 3 20

a) Write a menu driven C program to display the month of the year based on the number entered by the user (numbers from 1 to 12). 6

b) What do you mean by conditional operator ? Explain with an example. 4

c) Write a C program to accept 'n' numbers from the user and count the number of positive and negative numbers. 6

d) Find the output of the following code : 4

```
#include<stdio.h>
void abc(int a)  {
        ++a;
}
int main() {
        int a=10;
        abc(a); abc(a);
        printf("%d",a);
}
```

PART – B

Answer **any two** questions from the following : (2×20=40)

Question – 4 20

a) Define pointers. What are the advantages and disadvantages of pointers ? 4

b) What is a 2D array ? Explain with examples how to print the elements of a 2D array. 6

c) What is the difference between structures and unions ? 6

d) Explain the different modes of a file. 4

Question – 5 **20**

a) Find the output of the following codes : **4**

```
#include <stdio.h>
int main()
{
        int a=10,b=20,*p,s=0;
        P = &a;
        a++;
        (*p)++;
        s = a + b + *p ;
        printf("%d\n",s);
        return 0;
}
```

b) Write a C program to find largest element in a 1D array. **6**

c) Write a C program using structures to find and print the name of the book having highest price among a set of 'n' books. Members of the structure must be book title, serial number, price and no. of copies. **6**

d) Illustrate reading from and writing to a file using C programs. **4**

Question – 6 **20**

a) Write a C program to find the difference between two numbers by passing pointers to function method. **4**

b) Write a C program to count the number of positive, negative and zeros in an array of numbers. **6**

c) Illustrate with example, the concept of array of structures. **4**

d) Write a program to read content from a file with the name PL.txt and display the content to the user. **6**

PART – C

Answer **any one** question from the following : **(1×20=20)**

Question – 7 **20**

a) Draw a flowchart to print Fibonacci series up to 'n', where 'n' is a number entered by the user. **5**

b) Write a C program to create a user defined function called cube that will print the cube of the numbers from 1 to 10. **5**

c) Explain the following String handling function. Demonstrate the use of each with the help of a C Program : **5**

i) strrev()

ii) strcmp()

iii) strlen()

iv) strstr()

v) strcat()

d) Explain the concept of Dynamic Memory Allocation. **5**

Question – 8 **20**

a) Differentiate between 'while' loop and 'do while' loop. **5**

b) Explain the following with examples **5**

i) Function declaration and Prototypes

ii) Function definition and function call.

c) Write a C program to find the transpose of a matrix. **5**

d) Explain following functions with syntax with respect to files : **5**

a) fwrite()

b) ftell()

c) fopen()

d) fprintf()

e) fscanf()