



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)
```

```
    {
```

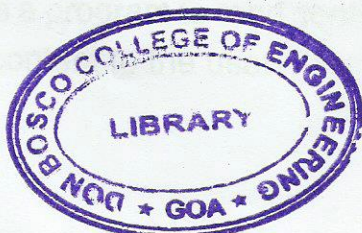
```
        i++;
```

```
        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()`