

Please check that this question paper contains 9 questions and 2 printed pages within first ten

MORNING

17 JUN 2023

[Total No. of Questions: 09]

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Uni. Roll No.

Program: B.Tech. (Batch 2018 onward)

Semester: 1/2

Name of Subject: Programming for Problem Solving

Subject Code: ESC-104

Paper ID: 15935

Scientific calculator is Not Allowed

Time Allowed: 03 Hours

Max. Marks: 60

NOTE:

- 1) Parts A and B are compulsory
- 2) Part-C has Two Questions Q8 and Q9. Both are compulsory, but with internal choice
- 3) Any missing data may be assumed appropriately

Part – A

[Marks: 02 each]

Q1.

- a) Define pseudocode. Write a pseudocode to find the sum and average of given three numbers.
- b) Write the syntax for nested if and else-if ladder?
- c) How to declare and initialize 1-D, 2-D array with an example.
- d) How many times i value is checked in the following C program?

```
#include<stdio.h>
```

```
Int main ()
```

```
{
```

```
Int i=0;
```

```
While (i < 3)
```

```
I++;
```

```
Printf (" In while loop\n");
```

```
}
```

- e) Distinguish between structure and pointer.
- f) Explain the different file operations.

Part – B**[Marks: 04 each]**

- Q2. Classify the different types of decision making statements with suitable example.
- Q3. What is the significance of a pointer variable? How a pointer variable is declared and initialized in c language?
- Q4. Write a C program to find the factorial of a number using do-while.
- Q5. Differentiate between call by value and call by reference with the help of program.
- Q6. Draw a flow chart for the Bubble sort and also write its algorithm.
- Q7. What is structure? Explain the C syntax of structure declaration with example.

Part – C**[Marks: 12 each]**

- Q8. Explain the various components of a computer system in detail.

OR

Write a C program to multiply two matrices with 2-D Array.

- Q9. a) List the characteristics of function? (2Marks)
- b) Explain different classification of user defined functions based on parameter passing and return type with examples. (10 Marks)

OR

- a).What is recursion? What are the advantages and Disadvantages of recursion? (6 Marks)
- b). Determine a C program to find the factorial of a given number using recursion. (6 Marks)
