

December 2023

B.Tech. (EL/CSE(AI ML)/CIVIL/ENV/FAE) - I ~~SEMESTER~~ SEMESTER

Programming for Problem solving (ESC-103)

Time: 3 Hours

Max. Marks:75

- Instructions:**
1. It is compulsory to answer all the questions (1.5 marks each) of Part -A in short.
 2. Answer any four questions from Part -B in detail.
 3. Different sub-parts of a question are to be attempted adjacent to each other.

PART -A

- Q1 (a) What is a compiler? (1.5)
- (b) What are the features of a good algorithm? (1.5)
- (c) Explain the difference between break and continue statement. (1.5)
- (d) Differentiate between RAM and ROM. (1.5)
- (e) Explain the idea of structures in brief. (1.5)
- (f) What is a header file? (1.5)
- (g) What do you mean by time complexity? (1.5)
- (h) What are strings? How are they different from arrays? (1.5)
- (i) Differentiate between local and global variables. (1.5)
- (j) What are unary operators? (1.5)

PART -B

- Q2 (a) Draw a flowchart to find the largest of three numbers. Also write the algorithm for the same. (10)
- (b) What is operating system? Write some important functions of an operating system. (5)
- Q3 (a) Write a program to find the grades of a student using switch-case. (5)
- (b) What is recursion? Write a program to print the Fibonacci series up to nth term using recursion. (10)
- Q4 Differentiate between arrays and structures. Write a program to store the information of students using structures. (15)
- Q5 (a) Explain the steps for sorting the given array using bubble sort: (5)
- 5, 7, 10, 2, 13, 9, 18, 15
- (b) Explain the concept of call by reference and call by value using an example of swapping two variables. (10)

(b) What are strings? Explain various built-in functions used with strings.

(5)

Q7 Write short notes on:

- (a) while vs do-while
- (b) file handling
- (c) pointers and double pointers

(15)
