

First/Second Semester B.E. Degree Examination, Dec.2019/Jan.2020 C Programming for Problem Solving

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. How would you explain the components of a computer with the block diagram? (08 Marks)
- b. Describe the types of computers. (06 Marks)
- c. Convert the following mathematical expression into C equivalent statements.

i) $m = x^4 + \sqrt{x + \frac{y}{k}} - 4x + 6$

ii) $x = \frac{-b + \sqrt{b^2 - 4ac}}{2a}$

iii) $\text{Area} = \pi r^2 + 2\pi r h$ (06 Marks)

OR

- 2 a. How can you write the basic structure of a C program? Explain with examples. (08 Marks)
- b. Define a token. Explain the different tokens available in C language. (08 Marks)
- c. How would you explain logical operator in a C language. (04 Marks)

Module-2

- 3 a. With examples how would you describe the formatted input and formatted output statements in C language. (08 Marks)
- b. How would you explain if-else statement in C language? Give the relevant example. (06 Marks)
- c. Write a program in C to display the grade based on the marks as follows :

Marks	Grades
0 to 39	F
40 to 49	E
50 to 59	D
60 to 69	C
70 to 79	B
80 to 89	A
90 to 100	O

(06 Marks)

OR

- 4 a. How would you explain switch statement with an example? (08 Marks)
- b. How the while loop differs from do-while loop? (06 Marks)
- c. Write a program to check whether a given integer is palindrome or not? (06 Marks)

Module-3

- 5 a. Define an array. How would you explain declaration and initialization of one dimensional array? (06 Marks)
- b. Write a program in C to implement binary searching technique. (06 Marks)
- c. How would you explain with examples, the string manipulation functions? (08 Marks)

OR

- 6 a. Write a program to read N integers and to arrange them in ascending order using bubble sort technique. (06 Marks)
b. How would you explain the declaration and initialization of string variables? (06 Marks)
c. Write a program to multiply 2 matrices, by ensuring their multiplication compatibility. (08 Marks)

Module-4

- 7 a. How would you illustrate the elements of user defined functions with examples? (10 Marks)
b. Write a program in C to find the factorial of a given integer using functions. (05 Marks)
c. Explain how call by value differs from call by reference while invoking a function. (05 Marks)

OR

- 8 a. How would you explain the categories of user defined functions? (10 Marks)
b. Write a program in C to compute the Fibonacci series up to n terms using recursion. (06 Marks)
c. List the storage class specifiers. Explain any one of them. (04 Marks)

Module-5

- 9 a. Define a structure. How would you declare and initialize structure variables? Give examples. (07 Marks)
b. Define Pointer. How are pointers declared and initialized? (06 Marks)
c. Write a C program to read details of 10 students and to print the marks of the student if his name is given as input. (07 Marks)

OR

- 10 a. Write a program in C to add two numbers using pointers. (05 Marks)
b. How would you explain the categories of preprocessor directives in C? (10 Marks)
c. How would you explain nested structures? (05 Marks)
