

# SCHEME

USN

11

18CPS13/23

First/Second Se

B.E.egree 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 front 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.

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

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

$$\text{iii) } \text{Area} = \sqrt{r^2 + 27trh} \quad (06 \text{ Marks})$$

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 describe the formatted input and thrmatted output statements in C language. (08 Marks)
- b. How would you explain if— else statement in C language? Give the relevant ex ample. (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

(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 a Pointer. How the pointers are 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)

