

CBCS SCHEME

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20MCA19

First Semester MCA Degree Examination, Feb./Mar. 2022 Basics of Programming and Computer Organization

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Discuss the classes of data types in C. (06 Marks)
- b. Write a C program to illustrate nested if statements. (07 Marks)
- c. Write a C program to illustrate conditional operator. (07 Marks)

OR

- 2 a. Write a C program to illustrate while loop. (07 Marks)
- b. Write a C program to print n^{th} Fibonacci number. (06 Marks)
- c. Write a C program to multiply the elements of two NXN matrices. (07 Marks)

Module-2

- 3 a. Explain how structures are used in a C program. (10 Marks)
- b. Write a program to illustrate the comparison of structure variables. (10 Marks)

OR

- 4 a. Write a C program to illustrate arrays of structures. (10 Marks)
- b. Write a C program to illustrate the method of sending an entire structure as a parameter to a function. (10 Marks)

Module-3

- 5 a. Explain how pointer variables are used in a C program. (10 Marks)
- b. Discuss about call by value and call by reference with an example program. (10 Marks)

OR

- 6 a. Write a program using pointers to compute the sum of all elements stored in an array. (10 Marks)
- b. Write a program that uses a function pointer as a function argument. (10 Marks)

Module-4

- 7 a. Draw and explain the blocks of a digital computer. (10 Marks)
- b. Convert the following $(10010.1011)_2$ to decimal. (05 Marks)
- c. Convert $(4057.06)_8$ to Binary. (05 Marks)

OR

- 8 a. Give truth tables of logical operations. (06 Marks)
- b. Using 10's complement subtract the following :
(i) $72532 - 3250$
(ii) $3250 - 72532$ (08 Marks)
- c. Give the symbols of digital logic circuits. (06 Marks)

Module-5

- 9 a. Discuss about basic operational concepts with neat diagram. (10 Marks)
b. Explain bus structures of a system. (10 Marks)

OR

- 10 a. How memory locations and addresses are maintained in a system? Explain. (10 Marks)
b. How instructions and instruction sequencing is done in a computer? Discuss. (10 Marks)

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