15021

B. Tech 1st Semester Examination

Principles of Computer Programming & C++ (NS)

BE-104

Time : 3 Hours   **Max. Marks : 100**

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt any one question from section A, B, C, and D. Section E is Compulsory. Each question caries 20 marks.

SECTION - A

1. List the various Input/ Output devices of Computer. What is the most common input device used in computer? What is difference between a softcopy and hardcopy? Differentiate between impact and Non-impact printers.   (20)

2. Define the fundamental unit of memory used in computer. What is the purpose of the main memory in the computer? Compare using a table, different types of memories used in the Computer.   (20)

SECTION - B

3. List and explain the steps that a programmer follows to develop a program. What you understand by term program testing? What are the different types of error occurs during program development?   (20)

4. Explain the term flow chart. Create a flow chart for the following scenario

    (i) For a routine task, such as calling a friend, that you do on a regular basis.   **[P.T.O.]**

    (ii) For calculating average of first n positive number added by user.   (20)

SECTION - C

5. What are the different data types used in C++? The formula for converting centigrade temperature to Fahrenheit is

$F = 32 + \left(C * \dfrac{180}{100} \right)$. Write a program that asks the user to enter a temperature reading in centigrade and then prints the equivalent Fahrenheit. Be sure to include atleast one negative number in Centigrade in your test cases.   (20)

6. Write a short note on following with example:

    (i) Formatted Input / Output in C++.

    (ii) Break and continue statements.   (20)

SECTION - D

7. What is function? What are the different types of the function based upon input arguments and return types? Write a program to implement calculator, which calculate product, quotient, and modulus of the given number. Calculate the quotient and modulus in one function using pass by reference.   (20)

8. What is file? What are the different modes to operate on file? Write a program that calculates the average number of characters per line in a file.   (20)

SECTION - E

9. Write a short note on the following with appropriate example:

    (i) Classes and objects

    (ii) Inheritance

    (iii) Recursion

    (iv) Strings   (4×5=20)