Dec-22-0106

CS-101 (Computer Fundamentals & Programming in C++)

B.Tech-1st (CBCS)

Time : 3 Hours   Max. Marks : 60

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: Question paper is having four sections with two questions each. Students are required to attempt one question from each section. Each question carries 10 Marks. Question Number - 9 is compulsory with total 20 marks.

UNIT-1

1. Discuss in detail the various functional components of a computer system with the help of block diagram.   (10)

2. (a) Differentiate between Application Software & System software.   (4)

   (b) Operating System act as a resource manager and resource allocator. Comment on this statement.   (6)

UNIT-2

3. Perform the following conversion   (10)

   (i) $(567)_{10} = (?)_{16}$

   (ii) $(A6C2)_{16} = (?)_8$

   (iii) $(101010110111)_2 = (?)_8$

   (iv) $(4181)_{10} = (?)_{16}$

   (v) $(101011011.101)_2 = (?)_{10}$

4. (a) Differentiate between Primary memory & Secondary memory.   (5)

   (b) Differentiate between Virtual memory and Cache memory.   (5)

UNIT-3

5. (a) What are the various data types used in C++? What are their memory requirements?   (5)

   (b) Why do we need header files?   (2)

   (c) What is precedence of operators in C++.   (3)

6. What are different types of operators used in C++. Explain in detail.   (10)

UNIT-4

7. (a) Write a program in C++ to find the largest number and its position in a given array.   (5)

   (b) Write a program in C++ to find out the largest out of given three numbers.   (5)

8. (a) What is the difference between array and structure? Declare a structure.   (5)
   Employee with the following member elements, Emp_name, Emp_date of birth, Emp_dept and Emp_sal. Declare an array of structure, read and print the data of N such employees.

   (b) Write a program in C++ to find the sum of two matrices.   (5)

9 (a) Difference between Compiler, Assembler and Interpreter.

   (b) What are different categories of programming languages?

   (c) Write a program in C++ to show the concept of nesting of loops.

   (d) What are various parameter passing techniques?

   (e) What are various scope rules for variable & function?

                                                   (5×4=20)