

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. (5)
- (b) What are different categories of programming languages? (5)
- (c) Write a program in C++ to show the concept of nesting of loops. (5)
- (d) What are various parameter passing techniques? (5)
- (e) What are various scope rules for variable & function? (5)