

(Compulsory Question)

9. (a) What is the difference virtual memory and cache memory ?
- (b) What is the difference between Application Software and System Software ?
- (c) Write a program in C++ to search a number in an array.
- (d) How a structure is passed through a function ? Illustrate with a programming example.
- (e) Write a program in C++ to demonstrate the concept of Nesting of if-else. **5×4=20**

Roll No.

Total Pages : 04

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B. Tech. EXAMINATION, 2022

Semester I (CBCS)

COMPUTER FUNDAMENTALS

AND PROGRAMMING IN C++

CS-101

Time : 3 Hours

Maximum 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 : Attempt *Five* questions in all, selecting *one* question from each Sections A, B, C and D. Q. No. **9** is compulsory.

Section A

1. Discuss in detail the various categories of programming languages. **10**

2. (a) Give the classification of Computers. 4
 (b) Define Operating System. What are the various functions performed by an Operating System ? 6

Section B

3. Perform the following conversions : 10
 (i) $(721)_8 = (?)_{10}$
 (ii) $(2605)_{10} = (?)_{16}$
 (iii) $(101111100001)_2 = (?)_{16}$
 (iv) $(10111011.1101)_2 = (?)_{10}$
 (v) $(A6C2)_{16} = (?)_8$
4. (a) Differentiate between the following :
 (i) Assembler, Compiler and Interpreter 3
 (ii) Multitasking, Multiprogramming, Multiprocessing. 3
 (b) Differentiate between Primary memory and Secondary memory. 4

Section C

5. (a) Differentiate between Arithmetic and Logical operators used in C++. 5

- (b) State the various features of Object-Oriented Programming. 5

6. (a) What is type casting ? Explain with suitable programming example. 5
 (b) What are the various data types used in C++ ? What are their memory requirements ? 5

Section D

7. (a) Write a program in C++ to print the sum of digit of a given number. 5
 (b) Write a program to find out the number of vowels in a given string. 5
8. (a) Write a program to find out the smallest number in a given array. 5
 (b) What is the difference between array and structure ? Declare a structure student with the following member elements, Stud_name, Stud_date of birth, Stud_dept and Stud_fee. Declare an array of structure, read and print the data of N such students. 5