2072
B.E. (Computer Science and Engineering)
Second Semester
CS-202: Object Oriented Programming

Time allowed: 3 Hours

Max. Marks: 50

NOTE: *Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Section.*

x-x-x

I. Write short answers of the following:
    a. What is copy constructor? Give an example.
    b. What are pointers? How the elements of an array can be accessed with the help of pointers?
    c. What is runtime polymorphism?
    d. Differentiate between pass by value, by address and by reference.
    e. What is a friend function in C++?
                                                 (2 marks each)

Section-A

II.
    a. What is object oriented programming? How is it different from procedural programming? Describe in brief principles of object oriented programming.
    b. Describe in brief various data types available in C++ along with their memory requirements.
                                                 (5,5)

III.
    a. What are the different forms of inheritance supported by C++? Explain with the help of examples.
    b. With the help of an example, describe how pointers to member functions can be declared and used.
                                                 (5,5)

IV.
    a. Define a class *string* with appropriate constructors, destructors and overloaded +, = and == operators for concatenation, assignment and equality operations. Illustrate their use in an example program.
    b. What is scope resolution operator? With the help of an example, describe its use.   **(7,3)**

Section-B

V.
    a. What are virtual functions? Explain the significance of virtual functions with the help of an example.
    b. What are the different ways to achieve polymorphism in C++? Explain with examples.   **(5,5)**

VI.
    a. What is an exception? How is an exception handled in C++? Describe with an example.
    b. What do you mean by template? Distinguish between function template and class template. Explain different ways to instantiate a function template.   **(5,5)**

VII. Write short notes on:
    a. Overloading of template functions
    b. Standard template library
                                                  (5,5)

x-x-x