(Please write your Exam Roll No.) Exam Roll No. .....

END TERM EXAMINATION

THIRD SEMESTER [B.TECH (CSE/IT)] NOVEMBER-DECEMBER 2019

Paper Code: IT-207 Subject: Object Oriented Programming Using C++

Time: 3 Hours Maximum Marks: 75

Note: Question No. 1 is compulsory. Answer any one from each unit.

Q1 Answer the following: (10x2.5=25)

(a) Explain the role of abstraction in object languages.
(b) Mention the order of execution of constructors and destructors for objects.
(c) Compare the features of structures and classes.
(d) Explain C++ garbage collection.
(e) Give the syntax of the following stream functions: getline() and write().
(f) Define pure virtual function. Give an example.
(g) Compare inline functions and macros. Discuss which one should be used in which circumstances?
(h) Explain the role of friends functions uses in operator overloading. Give an example.
(i) Compare multi-level and multiple inheritance in C++.
(j) Explain the features of iterators used in STL.

UNIT-I

Q2 (a) Compare structural programming and object oriented programming. (4)
(b) Write a C++ program to illustrate new and delete operators. (4)
(c) Explain the features of inheritance and polymorphism. (4.5)

OR

Q3 (a) What is the difference between data encapsulation and data hiding? Explain with an illustration. (2.5+2.5)
(b) Explain inheritance and its applications. (4)
(c) Mention the difference between C and C++ (3.5)

UNIT-II

Q4 (a) Write a C++ program to illustrate friend functions. Why friend function should be avoided? (4)
(b) Give an example to illustrate the state and behavior of an object. (4)
(c) Write a C++ program to illustrate static data members and static function members. (4.5)

OR

Q5 (a) Write a C++ program to illustrate the role of constructors and destructors in a class. (5)
(b) Write a C++ program to illustrate the array of pointers to objects. (4)
(c) Explain meta class and const member functions. Give an example for each. (3.5)

UNIT-III

Q6 (a) Write a C++ program to illustrate function template and class template. (4)
(b) Explain aggregation and composition used in object oriented languages. Give their applications. (3.5)
(c) Write a C++ program to illustrate operator overloading for binary and unary operator. (2.5+2.5)

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OR

Q7 (a) Compare overloading and overriding of member functions. Explain with an example. (3+3)

(b) Write a C++ program to illustrate virtual functions. (4)

(c) Mention the rules for virtual functions in C++. (2.5)

UNIT-IV

Q8 (a) Explain the persistent objects and multiple inheritance in C++. (3.5)

(b) Explain manipulators. Write a C++ program to illustrate user defined manipulators. (2+3)

(c) Explain the role of iterators and allocators used in STL. (4)

OR

Q9 (a) Explain exception handling. Mention the process of handling uncaught exceptions. (3.5)

(b) Write a C++ program to illustrate formatted I/O and unformatted I/O using stream functions. (4.5)

(c) Explain the features of the following STL: (4.5)

(i) Sequence containers

(ii) Associative containers

(iii) Derived containers

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