

USN

--	--	--	--	--	--	--	--	--	--

10EE664

## Sixth Semester B.E. Degree Examination, June/July 2016

### Object Oriented Programming using C++

Time: 3 hrs.

Max. Marks: 100

Note: Answer FIVE full questions, selecting at least TWO questions from each part.



#### PART - A

- 1 a. Compare and contrast object oriented programming with procedure oriented programming. (06 Marks)
- b. Explain the following terms :
  - i) Data encapsulation
  - ii) Inheritance
  - iii) Polymorphism
- c. Explain basic data types with examples. (09 Marks)
- 2 a. Explain the syntax and usage of switch control statement with an example. (05 Marks)
- b. Write a program in C++ to input n integers into an array and hence delete an element at position 'K' in the array and display the array of n-1 elements. (10 Marks)
- 3 a. Explain inline functions with an example. How are they different from other functions? (10 Marks)
- b. What is function overloading? Explain with an example. (06 Marks)
- c. Write a program in C++ to input 'n' integers into an array. Using a function to swap two numbers, reverse the given array and display it. (04 Marks)
- 4 a. What are classes and objects? Explain the syntax of declaration with an example. (10 Marks)
- b. What are static data members and static member functions? Explain with an example. (06 Marks)
- c. Explain with an example, the dynamic allocation of object and its creation. (06 Marks)

#### PART - B

- 5 a. What are constructors? Mention their features and how they are different from other member functions? (08 Marks)
- b. Write a program in C++ to create a class called "point" with data members:
  - i) X coordinate
  - ii) y coordinate
 and member function
  - i) Constructors with no parameters, with parameters
  - ii) Display the object.
 In the main program create objects using all constructors and display them. (10 Marks)
- c. What are friend functions? Explain with an example. (05 Marks)
- 6 a. What is operator overloading? Write a program in C++ to overload '\*' operator on complex data type. (08 Marks)
- b. Write the code in C++ to create a class called "polar" to represent complex nos. in polar form (magnitude and angle) with constructors and member function to display the complex no. Also include a function to perform type conversion from polar to rectangular form. (12 Marks)

- 7 a. Write a program in C++ to create two base classes of names base 1 (user name, phone no.) and base 2 (user name, account no, and balance). Derive a third class base 3 from the above two along with address (no, street, city). (12 Marks)
- b. What are abstract classes? What is its significance? (04 Marks)
- c. Explain the use of "this" operator. (04 Marks)
- 8 a. What is iostream in C++? Give the stream class hierarchy. (06 Marks)
- b. Explain how runtime polymorphism is implemented by using virtual functions using an example. (08 Marks)
- c. What is a manipulator? Enumerate various manipulators in C++. (06 Marks)

\* \* \* \* \*