

LTS

Object Oriented Programming

E-8

2K5-DS-01

Roll No.: 1802111049

Time : 3 Hrs.

M.M. 100

Note :

1. Part 'A' may be attempted in first 5 pages of Answer Sheet.
भाग 'क' के सभी उत्तर, उत्तर-पुस्तिका के प्रथम पांच पृष्ठों में ही करने हैं।
2. Part 'B' in rest of the Sheets of Answer Sheet.
भाग 'ख' के उत्तर, उत्तर-पुस्तिका के अगले शेष पृष्ठों में लिखिये।
3. Answers may be given in English or Hindi.
प्रश्नों के उत्तर अंग्रेजी अथवा हिन्दी में दीजिये।

Part 'A'

1. Attempt any ten questions:

10x2= 20

- (i) Differentiate between static and dynamic binding.
- (ii) What is copy constructor and its use.
- (iii) What are C++ streams?
- (iv) What are the properties of a static data member?
- (v) What is the use of Scope resolution operator in C++ ?
- (vi) What is an Virtual base class?
- (vii) What is Visibility mode?
- (viii) What is the use of this keyword?
- (ix) What is the purpose of defining a Destructor function?
- (x) Explain protected class member.
- (xi) What do you mean by garbage collection?
- (xii) Differentiate between a local and a static object.
- (xiii) What is access specifier and its use?
- (xiv) Explain briefly what is function overloading.

2. Attempt any 5 of the following questions:

5 x 4 = 20

- (i) What is a constructor and destructor? What is the use of default & copy constructors? Is a constructor mandatory for a Class? Explain by giving examples in each case.
- (ii) Explain how base class member functions can be invoked in a derived class if the derived class also has a member function with the same name.

- (iii) Explain in detail and what is the value of the following expression?
 $((!(4 - 4\% < 5 \ \&\& \ (6/4 > 3)))$
- (iv) Explain what is overloaded operator and how does a compiler proceed to execute an overloaded operator.
- (v) What are the various File Opening modes? How is (iso::app) mode different from (ios::ate) mode ?
- (vi) Explain the concept of late and early binding.
- (vii) What is virtual destructor? What is the use of declaring it under multiple inheritances?
- (viii) Explain the various techniques of defining pure virtual function.

PART-B

Attempt any 3 of the following questions:

3 x 20 = 60

- 3. (a) Define Virtual Function. Explain the mechanism of Virtual function.
(b) Explain public, private and protected access specifiers and show the ambiguity in multiple and multipath inheritance.
- 4. (a) Describe the terms private inheritance and protected inheritance with the help of an example program.
(b) Explain different types of construction C++. Explain copy constructor with an example.
- 5. (a) What is Dynamic Memory Allocation? Explain with the help of an example how to create and destroy objects dynamically.
(b) Create a class whose object represents a complex number (A complex number contains a real part and an imaginary part). Write a program so that it is possible to add two objects of this class and store the result in third object.
- 6. (a) What is inline function. Explain its advantages.
(b) What are files and how these are handled using a suitable example?
- 7. (a) What is inheritance? Explain with example how to inherit a class in C++.
(b) Discuss the term function overloading. Write a program using function overloading for subtracting two given integer matrices; two floating matrices and double precision matrices separately.