B.Tech/CSE/3rd Sem/CSEN-2103/2015

2015

OBJECT ORIENTED PROGRAMMING

(CSEN 2103)

Time Alloted : 3 Hours   Full Marks : 70

Figures out of the right margin indicate full marks.

Candidates are required to answer Group A and <u>any 5 (five)</u> from Group B to E, taking <u>at least one</u> from each group.

Candidates are required to give answer in their own words as far as practicable

GROUP - A
(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following :   [10×1=10]

    i)   What is default visibility mode for member of classes in C++?

    (a) Private   (b) Public

    (c) Protected   (d) Default

    ii) Which among the following is a correct way of declaring object of a class?

    (a) classname Objectname;

    (b) class Classname Objectname

    (c) class Classname object Objectname;

    (d) classname Object Objectname;

iii) How can we access the data members of an object using a pointer (to object) named "ptr"?

(a) ptr@datamember   (b) *ptr.datamember

(c) ptr->datamember   (d) ptr.datamember

iv) What is actual syntax of destructor in C++?

(a) !ClassName ( )   (b) @ClassName ( )

(c) $ClassName ( )   (d) ~ClassName ( )

v)   Which operator(s) among the following cannot be overloaded?

(a) Binary Operators   (b) Ternary Operators

(c) :: operator   (d) Unary Operators

vi) In JAVA, Applet is a/an

(a) Super Class   (b) Interface

(c) Package   (d) Object

vii) Which class cannot be a subclass in java?

(a) abstract   (b) Parent Class

(c) Final Class   (d) None of the above

viii) Runnable is a/an

(a) Class   (b) Variable

(c) Method   (d) Interface

ix) Which file is created after the compilation of a java source code a.java, by the JVM?

(a) a.class   (b) a.java

(c) a.doc   (d) a.cdr

x)   Methods that have the same name, but have different parameter list and different definitions are known as

(a) Overriden methods   (b) Overloaded methods

(c) Constructor methods   (d) None of these

GROUP - B

2. (a) What do you mean by a reference variable? Write the proper syntax to declare a reference variable. Write a code in C++ to swap two variables using reference variables as parameters

    (b) What is a friend function and a friend class? Explain with examples.   **(2+4)+6 = 12**

3. (a) Write the syntax for defining a member function outside the class definition. Write the syntax for creating an object dynamically. What is the purpose of keyword "delete" in C++?

    (b) Explain constructor overloading with example.

    (c) Is it possible to overload a destructor? Justify your answer with proper explanations.   **(2+2+2)+3+3 = 12**

GROUP - C

4. (a) What is the use of Virtual Class in C++? Explain with an example.

    (b) Suppose in multiple inheritance, there is more than one base class with the same function name. How can a derived class object identify each of them separately? Write the proper syntax to explain this situation.

    (c) What is "this" pointer?   **4+5+3 = 12**

5. (a) What is a nameless object? What is the scope of this object? What is a live object?

    (b) List few operators which are not allowed to be over-loaded. Write operator overloading function to distin-guish between prefix and postfix increment operation on object of a class.   **3+2+1+6 = 12**

Group - D

6. (a) What is byte code? What does the JVM do? What do you mean by CLASSPATH? What do you mean by garbage collection in Java?

    (b) Write the syntax of the main( ) method in java. Why is this method static? How is this method called during the execution of a program?   **8+4 = 12**

7. (a) Write an example code in Java to show how java imple-ments runtime polymorphism.

    (b) What are the different uses of the keyword "super" in java? Explain with an example.

    (c) Write a JAVA Program to print comand line argument. How does garbage collection in JAVA work?

                                       5+3+4 = 12

GROUP - E

8. (a) Is it possible in Java to implement multiple inheritance? Explain with an example how a derived class can inherit from more than one base classes.

    (b) Write down the differences between interfaces and abstract classes.

    (c) What is an abstract method? How is it implemented in Java?   **5+4+3 = 12**

9. (a) Write an applet program to draw a polygon fillied with green colour using the rgb format.

    (b) What is the difference between Java applets and Java application programs?

    (c) Explain the difference between creating a thread by extending the "Thread" class and creating a thread by implementing the "Runnable" interface, with suitabale programs.

    (d) How do we define "try" and "catch" block in Java?

                                       3+2+4+3 = 12