

2023

OBJECT ORIENTED PROGRAMMING USING JAVA

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

(Answer any five questions)

1. a) Fill in the blanks: 1x5=5
- i. The output of the Java compiler is known as _____.
 - ii. The output of the Java compiler is executed by the _____.
 - iii. It is possible to throw an exception explicitly using the _____.
 - iv. A subclass can call a constructor method defined by its super class by use of the _____ keyword.
 - v. If there is no constructor in a class, compiler automatically creates a _____ constructor.
- b) State whether the following statements are true or false: 1x5=5
- i. Top level classes and interfaces cannot be declared as private, where as nested classes and interfaces can be declared as private.
 - ii. Variables or methods declared with access modifier private are accessible only to methods of the class in which they're declared.
 - iii. A class is an instance of its object.
 - iv. The static block in a class is executed every time an object of the class is created.
 - v. Multiprocessing and multithreading, both are used to achieve multitasking.
- c) Write short notes on the following: 3+3+4=10
- i) Class ii) Inheritance ii) Encapsulation and data abstraction
2. a) How Java constructors are different from Java methods? Explain the copy constructor with a suitable example. 2+8=10
- b) Compare method overriding and method overloading. Can we override a static method? Justify. 8+2=10

3. a) What are interfaces? Explain how interfaces can be used for implementing multiple inheritance. 2+8=10
- b) Write the features of a static method? Mention the restrictions associated with it. What do you mean by a static class? 2+2+2=6
- c) Briefly discuss the scope of different access modifiers in Java. 4
4. a) Explain the following with suitable examples: 6+6=12
- i. 'this' keyword can be used to pass as arguments in the method.
- ii. use of 'this' keyword in constructor chaining
- b) What do you mean by exception handling? Write to suitable program in Java that correctly handles arithmetic and null pointer exceptions. 2+6=8
5. a) What is a wrapper class? Why is it needed? 5+2=7
- b) What do you mean by autoboxing and unboxing? Explain them with suitable examples. 10
- c) What is stream in Java? Mention the three standard I/O streams. 1+2=3
6. a) Write a Java program to count the number of vowels and digits in a given sentence. 8
- b) Write short notes on the following (any two): 2x6=12
- i) Procedure Oriented Programming Vs Object Oriented Programming
- ii) Java static block
- iii) Packages in Java
- iv) Multithreading in Java
- v) DatagramSocket class

ESTD. : 2006
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