

**2017****M.Sc.****2nd Semester Examination****COMPUTER SCIENCE****PAPER—COS-203***Full Marks : 50**Time : 2 Hours**The questions are of equal value.**The figures in the right-hand margin indicate full marks.**Candidates are required to give their answers in their own words as far as practicable.**Illustrate the answers wherever necessary.***Module—1****(OBJECT ORIENTED DESIGN)***(Marks : 25)*Answer any two questions : 2×10

1. (a) What is Use-case modeling?
- (b) Explain the components of a Use case diagram.
- (c) Draw Use case diagram for Online Shopping.

2+2+6*(Turn Over)*

2. (a) What are the differences between OOP and other conventional programming ?
- (b) What is an UML diagram ? Briefly describe some diagrams used in UML.
- (c) Explain association and aggregation in object oriented design.
- 4+4+2
3. (a) Describe static and dynamic modeling ?
- (b) Explain the diagrams used in static and dynamic modeling.
- (c) What is UML Extensibility Mechanism ? Explain the mechanisms.
- 2+4+4
4. Write short notes :
- $4 \times 2 \frac{1}{2}$
- (a) Encapsulation ;
- (b) Polymorphism ;
- (c) Inheritance ;
- (d) Dynamic Binding.

*[ Internal Assessment : 5 Marks ]*

**Module—2****(OBJECT ORIENTED PROGRAMMING WITH JAVA)**

(Marks : 25)

Answer any *two* questions : 2×10

1. (a) Explain *Byte code* concept of Java.  
(b) How *command line arguments* are handled in Java ?  
(c) Briefly explain about *access modifiers* and their usage.  
(d) Explain *garbage collection* and use of *finalize* method.  
2+2+3+3
  
2. (a) Describe usage of *this*, *super* and *final* keyword in Java.  
(b) Write down the differences between *abstract class* and *interface* in Java.  
(c) How to create and import *packages* in Java?  
(d) Write a code snippet to create an *anonymous inner class*.  
2+2+3+3
  
3. (a) Briefly describe *multithreading* in Java.  
(b) Explain *Runnable* interface and its methods.

(c) What is thread *synchronization* and how it is handled in Java ?

(d) Write a Java program to show *deadlock* for threads.

1+2+3+4

4. Write short notes :

$4 \times 2 \frac{1}{2}$

(a) Standard Java Packages ;

(b) Java AWT Controls ;

(c) Exception Handling in Java ;

(d) Method Overriding.

[ Internal Assessment : 5 Marks ]

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