

2018

M.Sc.

2nd Semester Examination

COMPUTER SCIENCE

PAPER—COS-203

Subject Code—26

Full Marks : 50

Time : 2 Hours

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)

Group—A

Answer any *two* questions : 2×2

1. (a) Why UML is used in object oriented design ?

(b) Explain the elements of a Use case diagram.

(Turn Over)

- (c) What is meta-class in object oriented programming concept ?
- (d) What are the advantages of Object Oriented Programming over other conventional programming ?

Group-B

Answer any *two* questions : 2×4

2. (a) Explain inheritance, encapsulation and polymorphism in object oriented design.
- (b) Briefly discuss the history and development of Object Oriented Programming language.
- (c) Explain generalization and specialization with an example.
- (d) Briefly explain the interaction diagram, sequence diagram and activity diagram used in UML.

Group-C

Answer any *one* question : 1×8

3. (a) (i) Draw Use case diagram of a Clinic using all use case elements.
- (ii) Discuss about links and association in object oriented design. 4+4

- (b) (i) Describe the diagrams used in static and dynamic modeling.
- (ii) What is UML Extensibility ?
- (iii) Show how stereotypes, tagged values, constraints can be used to extend UML. 2+2+4

Module—2

Object Oriented Programming with Java

(Marks : 25)

Group—A

Answer any *two* questions : 2×2

1. (a) Explain how JVM works in Java.
- (b) How Java handles command line arguments.
- (c) Define Inheritance and importance of super keyword in inheritance in Java.
- (d) Distinguish between method overloading and method overriding.

Group—B

Answer any *two* questions : 2×4

2. (a) Briefly explain exception handling mechanism using try, catch and finally.

- (b) Write a Java program to create your own Exception class and use it.
- (c) How many ways a thread can be created in Java? Explain each of them.
- (d) Why interfaces are used in Java? Distinguish between abstract class and interface.

Group-C

Answer any one question :

1×8

3. (a) What is thread synchronization ?
- (b) Write a java program to explain thread synchronization.
- (c) Why wait () and notify () methods are called from a synchronized method or block ? 2+4+2
4. (a) Explain any four methods of String class in Java.
- (b) Describe event handling mechanism in Java.
- (c) Write an Applet program to display a text and any figure using all necessary functions.

[Internal Assessment : 10 Marks]
