

2 0 2 2

( February )

COMPUTER SCIENCE

( Honours )

( Object-Oriented Programming through Java )

[ CS-502 CT ]

Marks : 38

Time : 2 hours

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

Answer **one** question from each Unit

UNIT—I

1. (a) Why is Java considered as platform independent? 2
- (b) Illustrate with an example, the use of the keywords 'static' and 'final'. 2
- (c) List the primitive data types of Java with an example of each. 4

2. (a) What do you understand when we say Java is strongly typed? 2
- (b) Explain with a complete example how objects can be passed as parameters to a method. 4
- (c) Write a parameterized constructor for a rectangle class. 2

UNIT—II

3. (a) Under what scenario would you prefer to use an interface rather than an abstract class? 1
- (b) How is method overriding different from method overloading? 2½
- (c) Explain with an example how you can create a thread in Java using the runnable interface. 4
4. (a) What is the use of the final keyword with respect to inheritance? 1½
- (b) List three features of enumerations in Java. 3
- (c) What is the catch-or-declare requirement in exception handling in Java? 3

( 3 )

UNIT—III

5. (a) List two features of a generic class and explain the benefit of using a generic class. What are the data types with which generics can work?  $2+1+1=4$
- (b) Write a program using appropriate streams to read some integers from the console and write these to a file.  $3\frac{1}{2}$
6. (a) Distinguish between the set and list interface. Explain with an example how an iterator can be used to access the elements of a Java collection.  $2+3=5$
- (b) Give examples, with the output, for the following string methods :  $2\frac{1}{2}$   
Substring, concat, replace, compareTo, startsWith

UNIT—IV

7. What is the difference between a Java application and a Java applet? Explain how a Java applet is executed in the browser. What is the use of the update method in the context of applets?  $3+3+1\frac{1}{2}=7\frac{1}{2}$

( 4 )

8. Explain the event delegation model used in Java. Illustrate with a suitable example.

$4+3\frac{1}{2}=7\frac{1}{2}$

UNIT—V

9. Explain how a server socket can be created in Java. How does the server listen to incoming requests? How does a client send a request for connection to the server? Finally, show how the server sends a reply to the client.  $2+2+2+1\frac{1}{2}=7\frac{1}{2}$
10. Describe the Connection and ResultSet interfaces in JDBC with a suitable example. Explain how an SQL query can be executed and the results displayed from a Java application.  $2+2+3\frac{1}{2}=7\frac{1}{2}$

★ ★ ★