

1056

M.Sc. (Bio-Informatics) Second Semester  
MBIN-8009: Programming Languages Bio-Informatics – I

Time allowed: 3 Hours

Max. Marks: 60

**NOTE:** Attempt five questions in all, including Question No. VII (Unit-IV) which is compulsory and selecting atleast one question each from Unit I-III.

x-x-x

**UNIT – I**

- I. a) What is Object Oriented Programming? Explain the advantages of Object Oriented Programming over structured programming.
- b) What are different types of operators in Java? Write a Java program to explain the use of relational operators? (6,6)
- II. a) What are command line arguments? Write a program in Java to print all the arguments in reverse order given at command line.
- b) What is Inheritance? Explain its advantages. Also explain with example how a subclass is derived from a super class in Java. (6,6)

**UNIT – II**

- III. a) What is the use of Interface in Java? How can you define and implement it using a program?
- b) What is a package in Java? How can you define your own package? How a class or an interface is added to a package? (6,6)
- IV. a) What is an exception? Explain two conditions when exception may occur?
- b) Write a program in Java to accept an integer number from the user. An exception is thrown if number entered is less than 10. (6,6)

**UNIT – III**

- V. a) How does Java implement the model of inter-process synchronization using Threads? Explain with the help of a Java program.
- b) What is an applet in Java? Give life cycle of an applet? (6,6)
- VI. What do you mean by stream in Java? What is the difference between byte stream and character stream? Write a program in Java that opens a .txt file to count the number of lines and characters in that file using Buffered Reader. (12)

P.T.O.

(2)

UNIT - IV

VII. Attempt the following:-

- a) What is Java virtual machine? Explain.
- b) What is the difference between the "==" operator and the "equals ()" method for String objects?
- c) What is the use of *super* keyword in Java? Explain.
- d) Explain two uses of "*final*" keyword with the help of example.
- e) Explain the advantages and disadvantages of garbage collection.
- f) What is the use of class path? How it helps in the execution of a Java program?
- g) What is the difference between *isAlive()* and *join()* methods in Java?
- h) What are Transient and Volatile Modifiers in Java?

(8x1½)

x-x-x