

1058

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

Time allowed: 3 Hours

Max. Marks: 60

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting atleast one question from each Unit.

x-x-x

I. Attempt the following:-

- a) In what ways does a switch statement differs from an if statement?
- b) When do we declare a member of a class static?
- c) What is the purpose of a final class?
- d) What are checked exceptions? Give examples.
- e) What is static import? How is it useful?
- f) Differentiate between a Java applet and a Java application.
- g) How does byte streams differ from character streams?
- h) What do you understand by inter-thread communication? (8x1½)

UNIT – I

II. Differentiate between following:-

- a) Objects and Classes
- b) Data abstraction and Data encapsulation
- c) Inheritance and Polymorphism
- d) Public, Private and Protected access modifiers (4x3)

- III. a) Create a class Book that represents books in a library. Include following members:
Instance variables: book_id, book_title, book_price, book_publisher
Methods: to assign initial values, to display the particulars of a book, to return price of the book.
Write a program that makes use of this class. Appropriately assume any required information yourself.
- b) What is inheritance? Write a program in Java to demonstrate hierarchical inheritance. Appropriately assume any required information yourself. (2x6)

(2)

UNIT- II

- IV. a) Discuss the various levels of access protection available for packages and their implications.
- b) How interfaces can be defined? Describe the similarities and differences between interfaces and classes. (2x6)
- V. a) What is a package? How a package can be created and accessed? Discuss with the help of an example.
- b) Write a try block that is likely to generate two types of exceptions and then incorporate necessary catch blocks to catch and handle them appropriately. (2x6)

UNIT – III

- VI. a) What is a Thread? Explain the life cycle of a Thread.
- b) Write an applet that displays the following information in bar chart form:

Year	2016	2017	2018
Sales	1000	1500	1200

Appropriately assume any required information yourself. (2x6)

- VII. a) Explain the purpose of following Java methods:
 notify(), wait(), join(), start(), run(), yield()
- b) Write a program in Java to copy the content of a text file in another text file. (2x6)

x-x-x