

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

Time allowed: 3 Hours

Max. Marks: 60

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

x-x-x

I	a) Why Java is important to the Internet? Discuss in brief. (1.5) b) What is inheritance? What are its advantages? Discuss in brief. (1.5) c) What do you understand by garbage collection? Discuss in brief. (1.5) d) What are inner classes? What is their utility? (1.5) e) What is an interface? What is its purpose? Discuss in brief. (1.5) f) What are checked exceptions? Give examples. (1.5) g) What do you mean by suspending a thread? Discuss in brief. (1.5) h) How an Applet is different from a Java application? Discuss in brief. (1.5)	
	UNIT-I	
II	a) What do you mean by Object Oriented Programming? Discuss the object oriented features supported by Java. (06) b) Create a class <i>Book</i> 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. (06)	
III	a) What is a constructor? What is its utility? Discuss in brief. (03) b) What is Recursion? What are its advantages? Discuss in brief. (03) c) What do you understand by Multilevel Inheritance? Write a program in Java to demonstrate multilevel inheritance. Appropriately assume any required information yourself. (06)	
	UNIT-II	
IV	a) What is the difference between an abstract class and an interface? What is the utility of both? Discuss. (06) b) How exceptions can be classified? Define an exception called "MyStringException" that is thrown when a string is not equal to "Year-2021". Appropriately assume any required information yourself. (06)	
V	a) What is the purpose of try and catch blocks? Write a program that shows that the order of catch blocks is important. Appropriately assume any required information yourself. (06) b) What are the steps involved in creating and using a package in Java? Discuss with the help of a suitable example. Appropriately assume any required information yourself. (06)	
	UNIT-III	
VI	a) How the priority of a thread is set in Java? Write a program to demonstrate that a high priority thread preempts the lower priority thread. Appropriately assume any required information yourself. (06) b) Write a note on the concept of streams in Java and then write a program to copy the content of a text file to another text file. Appropriately assume any required information yourself. (06)	
VII	a) Write a note on inter-thread communication and discuss how it can be accomplished. During your discussion, mention the important methods that can be used to implement inter-thread communication. (06) b) Write an applet that receives two numeric values as input from the user and then displays the greater on the screen. Appropriately assume any required information yourself. (06)	

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