1006E564   Candidate's Seat No :_____

M.Sc Sem.-2 Examination
P - 410
Bioinformatics
June 2022

Time : 2-00 Hours]   [Max. Marks : 50

Section-I -Attempt any three from this section.   **[42]**

Qu 1:
  A. Briefly explain about the JVM.   07 Marks
  B. Explain briefly the data types in Java. Explain each with examples.   07 Marks

Qu2:
  A. Briefly explain the relational and logical operators   07 Marks
  B. Write a Java program to input the year yyyy and print if it's a leap year or not.   07 Marks

Qu 3:
  A. Explain briefly the looping constructs in Java.   07 Marks
  B. Write a program to print all the even numbers between 1 and 100.   07 Marks

Qu 4:
  A. Explain briefly the conditional construct (if and switch case) in Java.   07 Marks
  B. Write a program to input a character and print whether it's a valid DNA character or not
     using switch case.   07 Marks

Qu 5:
     Explain Arrays in java with appropriate examples.   07 Marks
     Explain 2D Arrays in Java with appropriate examples   07 Marks

Qu 6:
  A. Explain briefly the access specifiers and its use in Java   07 Marks
  B. What are constructors and getter/setter methods in Java explain with examples 07 Marks

Qu 7:
  A. Write a program to define a class DNASequence with   07 Marks
     Data Members
        DNASequence   String
        Length   Integer
     Methods
        Default and overloaded constructor
        Getter/Setter Methods
        Complement (Which prints the complemented DNA string)
  B. Explain briefly types of inheritance. Show an example of simple inheritance.   07 Marks

Qu8:
  A. What is polymorphism and how is it implemented in java   07 Marks
  B. What is overriding. What is the difference between overloading and overriding   07 Marks

Section II- Answer the following questions   **[8]**

  1. Which of the following option leads to the portability and security of Java?
     a. Bytecode is executed by JVM   b.The applet makes the Java code secure and portable
     c Use of exception handling   d. Dynamic binding between objects

2. Given
   ```
   int values[ ] = {1,2,3,4,5,6,7,8,9,10};
   y=5;
   for(int i=0;i< y; ++i) ;
   System.out.println(values[i]);
   ```
   What will be the output _____.

3. What is true about a break?
   a. Break stops the execution of entire program
   b. Break halts the execution and forces the control out of the loop
   c. Break forces the control out of the loop and starts the execution of next iteration
   d. Break halts the execution of the loop for certain time frame

4. When no access modifier is specified _____ is implemented
   a. private
   b. public
   c. default
   d. protected

5. Which of these can be used to differentiate two or more methods having the same name?
   a. Parameters data type
   b. Number of parameters
   c. Return type of method
   d. All of the mentioned

6. _____ method is called before the Garbage Collector reclaims the memory.

7. Polymorphism is implemented in Java using
   a. Method Overloading
   b. final modifier
   c. main Method
   d. Access Modifiers

8. d Which of these class is superclass of every class in Java?
   a. String class
   b. Object class
   c. Abstract class
   d. ArrayList class

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