MCA (Revised) / BCA (Revised)

Term-End Examination

June, 2022

MCS-024 : OBJECT ORIENTED TECHNOLOGIES AND JAVA PROGRAMMING

Time : 3 hours   *Maximum Marks : 100*

(Weightage : 75%)

Note : *Question no.* **1** *is* **compulsory**. *Answer any* **three** *questions from the rest.*

1. (a) What is an abstract class ? How is it used to implement polymorphism in Java ? Give suitable example in support of your answer.   *5*

   (b) What is an applet ? Why is main( ) not included in writing a Java applet program ?   *5*

   (c) Explain the process of inter-thread communication in Java, with the help of a suitable example.   *5*

   (d) Differentiate between throw with throws statement. Give example code for each.   *5*

(e) What is classpath ? Explain the utility of classpath, with the help of a suitable example. *5*

(f) Compare private and protected access specifiers. Give suitable example for each. *5*

(g) Differentiate between Method-overloading and Method-overriding, with the help of a suitable example. *5*

(h) What is layout manager ? Explain any two layouts in Java. *5*

2. (a) What are proxy servers ? Explain the usage of anonymous proxy servers in designing mailing applications. *6*

(b) How does Servlet differ from Applet ? Discuss all the phases of a servlet lifecycle. *7*

(c) Write a program in Java to copy the text content of one file into another file. Support your program with suitable comments. *7*

3. (a) What is StringBuffer class ? Write a program in Java to append a given string to a StringBuffer object. *6*

(b) Write a program to pass parameters to an Applet using a web page. Also write the phases of an Applet lifecycle. *6*

(c) What is an event in Java ? How does Java handle events ? Write a program in Java to capture any event generated by keyboard. *8*

4. (a) Write a Java program to create a Teacher class and derive PGT, TGT and PRT classes from Teacher class. Define appropriate construction for all the classes. Also define a method to display information of Teacher. Make necessary assumptions as required. *10*

(b) Write a Java program to set up JDBC and execute an SQL statement on a database table 'BOOK', with fields BOOK_ISBN, BOOK_AUTH, BOOK_PRICE, BOOK_PUBL. The SQL statement should find the BOOK_AUTH and BOOK_PRICE of the BOOK having ISBN = 500123. *10*

5. (a) What is an Exception ? Briefly explain the causes of Exceptions. Describe how multiple exceptions are caught in Java, with the help of a suitable program code. *10*

(b) Write a Java program to print Fibonacci series, up to the nth term entered by the user. Support your program with suitable comments. *5*

(c) Explain the Java RMI architecture, with the help of a diagram. *5*

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