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INSTITUTE OF AERONAUTICAL ENGINEERING (Autonomous)

B.Tech III Semester End Examinations (Regular) - December, 2017

Regulation: IARE – R16

OBJECT ORIENTED PROGRAMMING THROUGH JAVA (Computer Science and Engineering))

Time: 3 Hours

Max Marks: 70

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the question must be answered in one place only

UNIT – I

1. (a) What are class and objects? Explain how an object can be constructed from a class with suitable example. [7M]
(b) Write a Java Program that accepts U (initial velocity) and A (Acceleration) and displays the distance with Time intervals i.e. $T=1, 2, 3 \dots n$. Use the formula $s=UT + 1/2AT^2$.
2. (a) What is Byte code? Explain the various stages of programming in Java. [7M]
(b) Create a class called rectangle containing variables length, width and methods AreaCalc() and PerimterCalc() and Invoke these methods from the main class to calculate the area and Perimeters of a Rectangle. Use constructor for initializing the length and width. [7M]

UNIT – II

3. (a) With the help of a code segment, justify how code redundancy can be reduced using inheritance? Taking three classes into consideration represent multilevel inheritance between them using the code as well as diagram. [7M]
(b) What is an interface? Create an interface called ThreeDFigure containing some constants and methods for calculating surface area and volume. Create a main class which will makes use of this interface. Discuss about the changes in the access privilege between main class and interface. [7M]
4. (a) What is a package? Create a package called student with a class Academic and interface sports. Now write a Java program that will make use of this student package. [7M]
(b) Explain the keywords this, static, super and final with one example each. [7M]

UNIT – III

5. (a) Differentiate between throw and throws. Differentiate between error and exception. Give example. [7M]
(b) What the states/lifecycle of a thread, Explain with a neat diagram [7M]
6. (a) Write a program that creates 3 threads by extending Thread class. First thread displays “Good Morning” every 1 sec, the second thread displays “Hello” every 2 seconds and the third displays “Welcome” every 3 seconds. [7M]
(b) Explain thread synchronization in detail. [7M]

UNIT – IV

7. (a) Write programs for: [7M]
i. To create a text file in the path `c:\java\abc.txt` and check whether that file exists. Using the command `exists()`, `isDirectory()`, `isFile()`, `getName()` and `getAbsolutePath()`.
ii. To rename the given file, after renaming the file delete the renamed file. (Accept the file name using command line arguments.)
(b) What is a stream? Explain Byte Stream and Character Stream. [7M]
8. (a) What are the various steps that are to be followed while writing a sample JDBC program? [7M]
(b) Write Java JDBC program that update the records in a Student table in Database containing the fields Roll Number (Integer), Name (String), Branch (String), Percentage (Float) based on Roll Number (Integer). [7M]

UNIT – V

9. (a) List and explain 7 commonly used controls while designing GUI using AWT. [7M]
(b) What is an applet? Explain the lifecycle of an applet. [7M]
10. (a) Create an Applet that displays a sample message, by illustrating the life cycle. [7M]
(b) Write a Java Program that creates a sample JPanel containing some swing components. [7M]

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