Code: CT21   **Subject: OOPS USING JAVA**

ALCCS

Time: 3 Hours   **JUNE 2015**   **Max. Marks: 100**

PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.

NOTE:
- **Question 1 is compulsory and carries 28 marks. Answer any FOUR questions from the rest. Marks are indicated against each question.**
- **Parts of a question should be answered at the same place.**

Q.1   a. Explain anonymous classes, with the help of appropriate code fragment.

b. What is a wrapper class? List the wrapper class for

   (i)   converting object numbers to primitive numbers

   (ii) converting number to strings

   (iii) converting string objects to numeric objects

c. Explain the terms introspection and persistence w.r.t. javabeans.

d. What is the Java collection framework and why was it defined? Is Iterator a Class or Interface? Where is it used?

e. Differentiate between the constructor method and finalizer method of Java.

f. What is Java applet? How is it different from Java application program?

g. What is the function of layout Manager? Explain in brief, any two layouts available in Java.   **(7 × 4)**

Q.2   a. Explain the advantages of object oriented programming language over structured programming language.   **(4)**

b. Why is Java considered a "Robust" and "Architecturally Neutral" language?   **(5)**

c. Identify the conditional operator in Java. Use this operator to compute the weekly salary of a salesperson selling books in a store. If "x" is the number of books sold in a week, the weekly salary is computed as .   **(1+4)**

$$\text{Salary} = \begin{cases} 4x + 100 & \text{for} \quad x < 40 \\ 300 & \text{for} \quad x = 40 \\ 4.5x + 150 & \text{for} \quad x > 140 \end{cases}$$

d. Differentiate between ArrayList and Vector Class.   **(4)**

Q.3   a. What are "Abstract classes" in Java? Can an instance of an abstract class be created? Explain with example.   **(8)**

        b. Identify the hierarchy of stream classes provided as a part of "java.io" package. Differentiate the "Reader" and "Writer" classes.   **(6)**

        c. Describe how a copy of an entire Java object with its state can be created?   **(4)**

Q.4   a. What is a thread? Describe the complete life cycle of a thread. How can we set the priority of a thread in Java? Explain with an example.   **(1+5+2)**

        b. What is thread synchronization? How is it achieved in Java, explain with the help of an example.   **(10)**

Q.5   a. Write a program in java for user defined exception named "illegal age exception". If the age entered by the user is less than 18 years or greater than 60 then the program should raise this exception which is explicitly handled by code.   **(8)**

        b. What is an exception? Explain, in brief, the basic exception handling mechanism of Java. Substantiate your answer with the general syntax of an exception handling block. List any two checked and any two unchecked exception defined in java.lang.   **(1+3+2)**

        c. Discuss the various levels of access protection available for packages and their implications.   **(4)**

Q.6   a. Write a program to implement TCP/UDP Client Server architecture program   **(6)**

        b. Write an applet to write a file by making textarea for writing in a browser using TextArea() making Labels & then creating file using File() constructor.   **(7)**

        c. List and explain in brief, the various types of controls supported by AWT.   **(5)**

Q.7   a. Write short note on the following:
           (i) Delegation Event Model
           (ii) ActionListener Interface
           (iii) CardLayout with an example program(Layout Manager).   **(3×5)**

        b. Why are the swing components called light weight components?   **(3)**