

ALCCS – NEW SCHEME

Time: 3 Hours

AUGUST 2012

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.

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- Q.1**
- a. What are the features of Java? Explain in brief.
 - b. What are the shortcomings of procedure oriented programming? Explain how does Object oriented programming overcome these shortcomings.
 - c. Explain method overloading and overriding with examples.
 - d. How do we design a user-defined package? What are the steps to add classes and interfaces in the package? Give suitable example.
 - e. Explain the advantages of using interfaces in Java? How they are different from Abstract Classes?
 - f. Differentiate between notify and notify ALL method.
 - g. What are Applets? Explain how applets are different from an application. (7 × 4)
- Q.2**
- a. Write a superclass Worker and subclasses HourlyWorker and SalariedWorker. Every worker has a name and a salary rate. Write a method computePay(int hours) that computes the weekly pay for every worker. An hourly worker gets paid the hourly wage for the actual number of hours worked, if hours is at most 40. If the hourly worker worked more than 40 hours, the excess is paid at time and a half. The salaried worker gets paid the hourly wage for 40 hours, no matter what the actual number of hours is. Write a static method that uses polymorphism to compute the pay of any worker. Supply a test program that tests these classes and methods. (9)
 - b. How inter thread communication is done in Java? Write a java program to create multithreads with different priorities. (9)
- Q.3**
- a. What is importance of exception handling mechanism in Java? Define and distinguish checked and unchecked exceptions. (9)
 - b. What do you mean by constructor overloading in java? Explain with an example. List special properties of constructors. (9)

- Q.4** Write short notes on the following (Any **FOUR**) giving suitable examples
- (i) Java API packages.
 - (ii) AWT controls.
 - (iii) Adapter classes.
 - (iv) Servlets.
 - (v) Event Listener Interfaces. **(4.5×4)**
- Q.5** a. Describe the various operators used in Java with their classifications. Explain left-shift operator with suitable example. **(9)**
- b. Write a program in Java to implement socket programming using Datagram class. **(9)**
- Q.6** a. What is java bean? Discuss its features in brief. What is the concept of persistent storage associated with beans? Discuss about its various types. **(9)**
- b. Describe different types of inheritance in Java. Demonstrate through a java program, how to achieve run time polymorphism in Java? **(9)**
- Q.7** a. What is the difference between String, StringBuffer and StringBuilder? Also explain when to use them. Why String class is final or immutable? **(9)**
- b. What is a final variable? Can you define a final variable without supplying its value? **(9)**