30-11-2013-DTP-P-8-NK-5

Con. 9983-13.

GX-12209

(3 Hours)

[**Total Marks : 80**

N.B. : (1) Question No. 1 is **compulsory**.

(2) Attempt any **three** from **remaining**.

1. (a) Write a Program in Java to find ^nC_r and ^nP_r.   5
   (b) What are the applications of wrapper classes? Explain.   5
   (c) Write an applet program to draw circle rectangle and line.   5
   (d) Write a detail note on System · arraycopy ( ).   5

2. (a) Assume that a bank maintains two kinds of accounts for customers, one called   8
   as savings account and the other as current account. The savings account provides
   compound interest and withdrawal facilities but no cheque book facility. The
   current account provides cheque book facility but no interest. Current account
   holders should also maintain a minimum balance and if the balance falls below
   this level, a service charge is imposed.
   Class account stores customer name, account number, and the type of account.
   Include member functions :-
   - Accept deposit from a customer and update the balance.
   - Display the balance.
   - Compute and deposit interest.
   - Permit withdrawal and update balance.
   - Check for minimum balance, impose penalty and update the balance.
   Draw class diagram for above senario.
   (b) For above problem statement, implement class account, current account and   8
   savings account.
   (c) Exam association and aggregation with suitable example.   4

3. (a) Write a program to display area of square and rectangle. Make use of interface   10
   to define templates of methods to be there in the derive classes.
   (b) With the help of suitable example explain multithreading in terms of following:-   10
   (i) Creating threads, extending the thread class.
   (ii) Life-cycle of thread.

4. (a) Write a detailed note on exception handling in terms of following :-   10
   (i) Try-catch.
   (ii) Finally keyword.
   (iii) Cathing multiple exception.
   (iv) Throwing exception.
   (b) Write a java program to find out no. of uppercase and lowercases characters,   10
   blank spaces and digits and special characters from string.

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5. (a) Write an interactive program to create a vector object and populate it with names 7
of cities. Program should display and implement following menu choices :-
  - Add city : if city name already exists in the vector then program should display appropriate message.
  - Remove city : If city does not exists in vector then program should display appropriate message.
  - Display all : should display contents of vector.

(b) Compare and contrast overriding method and overloading method with suitable 8
examples.

(c) Draw a sequence diagram that shows the interaction between caller, customer 5
and creditcard for the statement "Customer uses a credit card for doing the payment".

6. Write a short notes on (any **four**) :- 20
  (a) JVM.
  (b) Abstract methods and classes.
  (c) Method overloading.
  (d) Package.
  (e) Static data, member and methods.
  (f) Difference between C++ and Java.