cs 3 sem object orientaed programming methodology JUN 2015

(3 Hours) [Total Marks : 80

N.B. : (1) Question No. 1 is **compulsory**.
  (2) Attempt any **three** from remaining.

1. (a) Write a program to calculate GCD of two numbers in JAVA.   5
 (b) Explain any three features of JAVA.   5
 (c) Draw and explain applet life cycle.   5
 (d) Explain wrapper class and its applications.   5

2. (a) Write a program in JAVA to display following pattern. (Take input for number   5
of rows from command line)

```
1
1   2
1   2   3
1   2   3   4
```

 (b) Write a note on System.arraycopy ( ).   5
 (c) Identify classes and their attributes and draw the relationships specified by   10
following problem.
  (i) Bank maintains two kinds of accounts for customer, Saving account
   & current account. Saving account provides compound interest and
   withdrawal facility.Current account provides cheque book facility
   but no interest.
  (ii) Library maintains books and magazines. A student can issue a book
   or return a book. A fine is charged if book is returned after 8 days.
   The magazines are not issued, but student can read it in library.

3. (a) What is a package ? Explain with example the steps to create package and   10
add a class or an interface.
 (b) Write a program to create vector objects with student names. Program should   10
perform following operations based on choice :
  (i) Add student name - To add new student name in the vector.
  (ii) Remove student name -Removes student name if already exists else
   display appropriate message.
  (iii) Display-Display contents of vector.

4. (a) What is Exception ? Explain how JAVA handles an Exception using following   10
keywords :
  try, catch, throw, throws & finally

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(b) Write a program to read and display details of ten Employees with following   10
specifications :
Data Members : Emp_ID, Emp_name, Emp_Salary
Parameterized constructor to initialize data members of Employees and Member
functions :
Display () - to display information of all employees

5. (a) With the help of suitable example explain how threads are created in JAVA.   5
   (b) Explain multiple inheritance in JAVA with example   5
   (c) Write a program to count the number of alphabets, digits and special symbols   10
       from string.

6. Write short notes on (any **four**)   20
   (a) Method overloading & overriding
   (b) Static data members & methods
   (c) Abstract class & methods
   (d) Constructor & its type
   (e) JVM.