2011
SECTION A (40 MARKS)
Attempt all questions

Question 1

(a) What is the difference between an object and a class?   [2]

(b) What does the keyword **token** refers to, in the context of Java? Give an example.   [2]

(c) State the difference between entry controlled and exit controlled loops.   [2]

(d) What are the two ways of invoking functions?   [2]

(e) What is the difference between / and % operators?   [2]

Question 2

(a) State the total size in bytes of the arrays a[4] of char data type
     p[4] of float data type.   [2]

(b) (i) Name the package that contains scanner class.

     (ii) Which units of the class gets called when the object of the class is created.   [2]

(c) Give the output of the following.
     String n = "Computer knowledge.";
     String m = "Computer applications";
     System.out.println(n.substring(0,8).concat(m.substring(9)));
     System.out.println(n.endsWith("e"));   [2]

(d) Write the output of the following:
     (i)   System.out.println(Character.isUpperCase('R'));
     (ii) System.out.println(Character.toUpperCase('j'));   [2]

(e) What is the role of keyword void in declaring functions?   [2]

Question 3

(a) Analyze the program segment and determine how many times
     the loop will be executed and what will be the output?
     int p=200;
     while(true)
     {
         if(p<100)
         break;
         p=p-20;
     }
     System.out.println(p);   [2]

(b) What will be the output of the following code?
     (i)   int k=5,j=0;
           k+=k++ - ++j + k;
           System.out.println("k="+k);
           System.out.println("j="+j);   [2]
       (ii) double b = -15.6;
           double a=Math.rint(Math.abs(b));
           System.out.println("a="+a);   [2]

(c) Explain the concept of constructor oveloading with an example.   [2]

(d) Give the prototype of a function *search* which receives a sentence **sentnc** and a word **wrd**
     and returns 1 or 0.   [2]

(e) Write an expression in Java for   [2]

(f) Write a statement each to perform the following task on a string:
     (i) Find and display the position of the last space in a string **s**.
     (ii) Convert a number stored in a string variable **x** to double data type.   [2]

(g) Name the keyword that
     (i) informs that an error has occurred in an input/output operation
     (ii) distinguishes between instance variables and class variables.   [2]

(h) What are library classes?   [2]

(i) Write one difference between Linear search and Binary search   [2]

2011
SECTION B (60 MARKS)
Attempt any four questions

Question 4

Define a class called **mobike** with following description:

Instance variables/datamembers:

int bno   to store the bikes number

int phno   to store the phone number of the subscriber

String name   to store the name of the customer

int days   to store the number of days the bike is taken on rent

int charge   to calculate and store the total charge

Member methods:

void input() to input and store the detail of the customer

void compute() to compute the rental charge

The rent is charged as follows

First five days   Rs. 500 per day

Next five days   Rs. 400 per day

Rest of the days   Rs. 200 per day

void display()   to display the details in the following format

Bike No.	Phone No.	Name	No. of days	Charge	
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Question 5

Write a program to input and store the weight of ten people. Sort and display them in descending order using selection exchange sort technique.   [15]

Question 6

Write a program to input a number and print whether it is a special number or not. (A number is said to be a special number if the sum of the factorial of the digits of the number same as the number). Example: 145. because $1! + 4! + 5! = 1 + 24 + 120 = 145$. The ! stands for factorial and factorial of a number is product of integers from 1 to the number.   [15]

Question 7

Write a program to accept a word and convert it into lowercase if it is uppercase, and display the new word by replacing only the vowels with the character following.

Example: Sample input: **computer**   Output: **cpmpvtfr**   [15]

Question 8

Design a class to overload a function compare() as follows:

(a) void compare(int, int)   - to compare two integer values and print the greater of the two integers.

(b) void compare(char, char)   - to compare the numeric value of two characters and print the character with   higher numeric value.

(c) void compare(String, String) - to compare length of two strings and print the longer of the two.   [15]

Question 9

Write a menu driven program to perform the following: Use switch case.

(a) To print series 0, 3, 8, 15, 24 … n terms (value of n is to be input by user).

(b) To find the sum of the series: $S = 1/2 + ¾ + 5/6 + … + 19/20$ [15]