Assignments on Language Fundamentals

1. Find the maximum of three numbers.

   static int calMax(int x,int y,int z)

2. Write a program to check whether the input alphabet is a vowel or not.

   static boolean checkAlpha(char alph)

3. Develop a program, that accepts a deposit amount and calculates amount of interest the deposit amount earns in a year. The bank pays a flat 4% interest for deposits of up to Rs.1000, a flat 4.5% per year for deposits of up to Rs.5000, and a flat 5% for deposits of more than Rs.5000.

   static double calInterest(int amt)

4. Develop the program, which accepts the gross pay and produces the amount of tax owed. For a gross pay of $240 or less, the tax is 0%; for over $240 and less than $480, the tax rate is 15%; and for any pay over $480, the tax rate is 28%.

   static double calTax(int gp)

5. Find the number is prime or not.

   static boolean isPrimeNumber(int num)

6. Method will accept range value and print all prime numbers from 2 to range on console.

   void printPrime(int maxVal)

7. An old-style movie theater has a simple profit program. Each customer pays $5 per ticket. Every performance costs the theater $20, plus $.50 per attendee. Develop the program that accepts the number of attendees (of a show) and calculates how much income the show earns.

```
static float calculateProfit( int numAttendees)
```

8. Electricity board wants to develop program to calculate Electricity Bill. They have two types of connections domestic and commercial, charges for domestic bill are as follows if consumed units are less or equals 100 then Rs.4/units or Rs. 250 whichever is greater if consumed units are between 100 to 300 then Rs.4.50/units if more than 300 and less than 500 Rs.4.75/units and above 500 Rs.5/units.
For commercial connections charges are calculated as follows
Consumed units are less or equals 100 then Rs.4.25/units or Rs. 350 whichever is greater.
if consumed units are between 100 to 300 then Rs.4.75/units.
if more than 300 and less than 500 Rs.5/units and above 500 Rs.5.25/units calculate electricity bill.

```
static double calculateBill( String connectionType, int consumedUnits)
```

9. Some credit card companies pay back a small portion of the charges a customer makes over a year. A particular credit card company's pay back policy is as follows:
1.0.25% for charges up to Rs. 500.
2.0.50% for the next Rs.1000 (that is, the portion between Rs. 500 and Rs. 1500),
3.0.75% for the next Rs.1000 (that is, the portion between Rs. 1500 and Rs. 2500),
4.1.0% for charges above Rs2500.
Thus, a customer who charges Rs. 400 a year receives Rs.1.00,
which is 0.25 x 1/100 x 400, and one who charges Rs1, 400 a year receives Rs. 5.75,
which is 1.25 = 0.25 x 1/100 x 500 for the first Rs. 500 and 0.50 x 1/100 x 900 = 4.50 for the next Rs. 900. Determine by hand the pay backs amount for a customer who charged Rs. 2000 and one who charged Rs. 2600.
Define the program, which accepts a charge amount and computes the corresponding pay back amount.

```
static float chargeAmount(int Charges)
```

10.Write a program to create a rectangular array containing a multiplication table from 1*1 up to 12*12. Output the table as 13 columns with the numeric values right-aligned in columns. (The first line of output will be the column headings, the first column with no heading, then the numbers 1 to 12 for the remaining columns. The first item in each of the succeeding lines is the row heading, which ranges from 1 to 12.)

static void displayMultiplicationMatrix()

Note : make use of System.format() method for printing numbers in output(right aligned)