Introduction to Programming (Final Exam)

Practice Questions

Q1

ABC Company wants to store daily sales of 5 salesmen. The company maintains this information using a software program and uses an array to store the details. The following table shows the sales of each salesman.

Salesmen ID	1	2	3	4	5
Array *index*	0	1	2	3	4
Sales	5000	6000	4000	1500	500

a)Write a function called **inputSales ()** which will take the float array and the integer size of the array as parameters and fill the array with keyboard inputs. ***(2 marks)***

b) Write a function called **findMaxSales ()** which will take the float array and the integer size of the array as parameters to find and return the maximum sales in the array. ***(3 marks)***

c)Write a function called **findMinSales ()** which will take the float array and the integer size of the array as parameters to find and return the minimum sales in the array. ***(3 marks)***

d) Write a function called **calcCommission ()** to find the commissions that need to pay the ABC company for their salesmen. The function should take each sales value as a parameter and return the commission. The commissions for each sale are calculated as follows. ***(7 marks)***

If sales are more than Rs. 5000.00, 6% commissions from sales.
If sales are between Rs. 5000.00 and Rs. 1000.00. 4% commissions from sales.
If sales are less than Rs. 1000.00, 2%of commission rate from sales.

e) Write a function called **PrintReport ()** to print the summary of the sales. ***(5 marks)***
Hint: To Calculate the Commission use the calcCommission () function.

Salesman ID	**Sales**	**Commission**
1	5000	200
2	6000	360
3	4000	160
4	1500	60
5	500	10

f) Write a main function to do the followings:

Create a float array with the name **Sales**. The array size is 5. ***(1 mark)***
Insert sales of each salesman to Sales array using **inputSales** () function. ***(1 mark)***
Find and print the maximum sale of the set of 5 salesmen using the **findMaxSales()** function. ***(1 mark)***
Find and print the minimum sale of the set of 5 salesmen using the **findMinSales ()** function. ***(1 mark)***

Print the report using the function **PrintReport ()** function. ***(1 mark)***

```
Enter the Salesman ID 1 Sales : 5000
Enter the Salesman ID 2 Sales : 6000
Enter the Salesman ID 3 Sales : 4000
Enter the Salesman ID 4 Sales : 1500
Enter the Salesman ID 5 Sales : 500
The maximum sales is : 6000
The minimum sales is : 500
Salesman ID     Sales          Commission
1                5000            200
2                6000            360
3                4000            160
4                1500             60
5                 500             10
```

Q2

XYR is one of the most popular grocery suppliers. The company weekly record transaction details of two (2) Outlets of product X. Table1 represents transaction details of the two outlets. The transaction record is a 4-digit number.

Table 1- Transaction records of product X

Day	M(Monday)	T(Tuesday)	W(Wednesday)	H(Thursday)
Transaction Record (outlet 1)	1165	1285	1365	1465
Transaction Record (outlet 2)	2105	2248	2395	2435

The transaction record is a 4-digit number. The format is ABZZ.

A (1st digit) indicates Outlet (1= Outlet 1 and 2= Outlet 2)

B (next digit) indicates day (1=M, 2=T, 3=W, 4=H)

ZZ (last 2 digits) indicates quantity

Write a function using C++ statements called *InputTransactions*() which takes an integer *array* and an integer as the *size of the array* as parameters. The method should ask the user to insert transaction record of each outlet and for each day and fill the array. The values are entered through the keyboard and must be validated. (**10 marks**)

Hint: The transaction record is a 4-digit number.

Q3

Write a C++ Program to do the following.

- Create a typedef structure called ***Doctor*** that includes medical license (string), name of the doctor (string), channeling fee (float) and the number of patients checked during the week (int array). (**3 marks**)
- Write a function called ***getData( )*** which is the data type of Doctor that reads the details of Doctor and stores them in the variable of the Doctor typedef structure. . (**5 marks**)

Hint: Use the given function prototype as

```
Doctor getData(Doctor d);
```

- Write a function called ***calDocFee( )*** which takes three parameters, channel fee of the doctor, number of patients channelled in a week (7 days) array and the size of the array. Find the total charges for the channelling of the doctor and print the total channelling fee. (**5 marks**)
- Call the ***getData( )*** and ***calDocFee( )*** in the main function to print the following output as required. (**2 marks**)

Sample Output

```
Enter Medical License: M-SL15789
Enter the Name of the Doctor: Amal
Enter the Channeling Fee: 1500.00
Enter the number of patients-Day1:3
Enter the number of patients-Day2:4
Enter the number of patients-Day3:6
Enter the number of patients-Day4:7
Enter the number of patients-Day5:3
Enter the number of patients-Day6:9
Enter the number of patients-Day7:10

Total Channeling Fee: 63000
```