

Learning Unit: Advanced Array Concepts**Question 1****(Marks:30)**

Write a Java program that will create a report to display the top three mobile device sales per month from January to March 2018. The rows and columns represent the monthly sales of each device.

	JAN	FEB	MAR	TOTAL
iPhone 7	30	15	35	80
Samsung S8	20	25	30	75
Huawei Mate 10	25	11	32	68
MONTHLY TOTAL	75	51	97	

Using a Two-Dimensional array, produce the monthly mobile device sales report and the total sales for each device.

Example of output:

```

*****
TOP CELL PHONE SALES REPORT - 2018
*****
      JAN      FEB      MAR      TOTAL
iPhone 7      30      15      35      80
Samsung S8    20      25      30      75
Huawei Mate 10 25      11      32      68
*****
MONTHLY TOTAL 75      51      97
*****

```

Requirement	Mark	Examiner
Declaration and Population of Two-Dimensional Array.	9	
Printing of the rows and columns.	8	
Accumulating totals.	7	
Printing the totals.	3	
Report produced as per sample.	3	
TOTAL	30	

Learning Unit: Inheritance

Question 2**(Marks:30)**

Design a console application that will print the final result obtained by a student with the weighting of each module. Make use of an abstract class named Student that contains variables to store the student number, test result, assignment result and exam. Create a constructor that accepts the student number, test result, assignment result and the exam result as parameters and create get methods for the variables. The Student class must implement an iReport interface that contains the following:

```
public interface iReport {  
    public void print_report();  
}
```

Create a subclass called Student_Report that extends the Student class. The Student_Report class must contain a constructor to accept the student number, test, assignment and exam results as parameters. Write code for the print_report method which calculates each assessment weighting as follows:

Assessment	Weighting
Test	25%
Assignment	25%
Exam	50%

Finally write a useStudent class to instantiate the Student_Report class. Sample output is shown below and you may hard code the same values to test your application.

```

STUDENT REPORT

*****
STUDENT NUMBER: 11007
TEST WEIGHTING: 20.0
ASSIGNMENT WEIGHTING: 18.75
EXAM WEIGHTING: 32.5
FINAL RESULT: 71.25%
*****

```

Requirement	Mark	Examiner
iReport interface class created	6	
Abstract Student class created with: <ul style="list-style-type: none"> • Constructor; • Variables and Methods; • Input and Output. 	10	
Student Report class that extends Student class and contains: <ul style="list-style-type: none"> • Constructor; • Print Report Method. 	8	
Use Student class created to: <ul style="list-style-type: none"> • Instantiate the Student Report class. 	3	
Report produced as per sample.	3	
TOTAL	30	

END OF PAPER

NOTE: In addition to the model answers provided here, you may also consider other facts offered in the answers - provided they are relevant and factually correct and reaching the same conclusion as the model answer, in a manner that achieves the outcome as intended by the answer in the memorandum.

Memorandum: Question 1

(Marks: 30)

Ref: LU1

/*

Memo: Test 1

Module: PROG6112

Main Class: Device Sales Application

Question: 1

*****Sample code only to be used as a guide*****

***/**

public class DEVICE_SALES{

public static void main(String[] args)

{

String[] Products = {"iPhone 7", "Samsung S8", "Huawei Mate 10"};

int[] CellTotals = new int[3];

int[][] sales = {{30, 15, 35},

{20, 25, 30},

{25, 11, 32}};

System.out.println("***
*****");**

System.out.println("TOP CELL PHONE SALES REPORT - 2018");

System.out.println("***
*****");**