AM Computing Task 2 Specimen Marking Scheme

| 1 | a | ```java
import java.util.Scanner;
public class GradesAverage {
  public static void main(String[] args) {

    final int LOWEST_GRADE  = 0;
    final int HIGHEST_GRADE = 100;

    int[] grades;
    int i,numStudents, sum;
    double average;

    Scanner sc = new Scanner(System.in);


    System.out.print("Enter the number of students: ");
    numStudents = sc.nextInt();

    if (numStudents <= 0)
      System.out.println("Invalid number of students.");

    else {

      grades = new int[numStudents];
      i=0;
      sum=0;
      while (i < numStudents)
        {
          System.out.printf("Enter the grade for student", (i+1));
          int grade = sc.nextInt();

          if ((grade >= LOWEST_GRADE) && (grade <= HIGHEST_GRADE)) {
            grades[i] = grade;
            sum     += grade;
            i++;
          }
          else
            System.out.println("Invalid grade, try again...");
        }
        average = sum / numStudents;
        System.out.printf("The average is " + average);
    }
    sc.close();
  }
}
``` | Award 1 mark for the correct use of the input statement<br>Award 1 mark for the correct syntax and logic use of if statement<br>Award 1 mark for correct array declaration<br>Award 2 marks for correct syntax and logic use of a looping structure<br>Award 1 mark for the correct syntax of inputting data into array<br>Award 3 marks for correct syntax and logic use of if statement for range checking<br>Award 1 mark for correct calculation of average | 10 |
| 2 | | ```java
    PassFail pf = new PassFail();
    …
    …
    if (pf.passORfail(grades[i]))
      System.out.println ("Passed");
    else
      System.out.println ("Failed");

    …
    …


public class PassFail {

  public boolean passORfail (int mark){
    if (num < 50)
      return false;
``` | Award 3 marks for correct method signature and proper declaration of input and output parameters<br>Award 3 marks for correct syntax for checking whether number is above or below 50<br>Award 1 mark for correctly returning output<br><br>Award 1 mark for correct instantiation of object<br>Award 1 mark for correct calling of method in test class and displaying | 10 |

		else
		   return true;
		  }
		}
			"Passed" or "Failed" respectively
			Award 1 mark for providing and sending correct input into method	
| 3 | | ```java
public class Printing {
    public void printArray(int[] inputArray) {
        for (int i = 0; i< inputArray.length; i++){
            System.out.println(inputArray[i]);

        }
    }
    public void printArray(double[] inputArray) {
         for (int i = 0; i< inputArray.length; i++){
            System.out.println(inputArray[i]);
        }
    }
    public void printArray(char[] inputArray) {
        for (int i = 0; i< inputArray.length; i++){
            System.out.print(inputArray[i]);
        }
    }
}

public class printTest {
  public static void main(String args[]) {
        int[] integerArray = { 3, 12, 13, 22, 33 };
        double[] doubleArray = { 3.3, 12.3, 13.3,
22.3, 33.3, 66.6, 77.7 };
        char[] characterArray = { 'H', 'e', 'l', 'l',
'o' };

        Printing p = new Printing ();

        System.out.println("Array integerArray
contains:");
        p.printArray(integerArray);

        System.out.println("\nArray doubleArray
contains:");
        p.printArray(doubleArray);

        System.out.println("\nArray characterArray
contains:");
        p.printArray(characterArray);
    }
}
``` | Award 1 mark for correct method signature and proper declaration of parameters<br>Award 1 mark for correct use of a loop to traverse contents of array<br>Award 1 mark for correct looping until end of array<br>Award 1 mark for correctly outputting contents of array<br><br>Award 1 mark for evidence of understanding what method overloading is and naming all methods the same name but with difference parameters<br>Award 1 mark for correct looping until end of array<br>Award 1 mark for correctly outputting contents of array<br><br>Award 1 mark for correct instantiation of objects<br>Award 1 mark for correctly initialising arrays with appropriate data<br>Award 1 mark for calling methods correctly and sending the correct inputs | 10 |