

Section A

[40 marks]

Answer ALL questions in this section.

A1. Write Java statements to accomplish each of the following:

- (a) Declare a variable status to be of type boolean. [2]
- (b) To compare the values of two variables email and temp of type String. [2]
- (c) To assign a float value 2.34 to a variable rate. [2]
- (d) Display a message “do better” using a method from the Systems class. [2]
- (e) Declare a method processItem that returns a value of float type, and has an integer argument data. [2]

A2. (a) State THREE window components that can be used in an applet program. [3]

(b) Give TWO layout managers that can be used in an applet program. [2]

A3. State whether each of the following statements are correct or incorrect. [8]

- (a) javac is a command that can be used to run a java program.
- (b) When declaring a method header that returns a value, the keyword ‘void’ is sometimes used to declare the method header.
- (c) The + operator can be used only as an arithmetic operator.
- (d) Infinite loops are caused when the loop-continuation condition in an iteration structure is always true.

- (e) We cannot concatenate strings with other data types.
- (f) A TextField must be created with initial text.
- (g) Encapsulation allows a class to be created from another class.
- (h) An asterisk (*) can be used as a wildcard symbol to represent all the classes in a package.

A4. Explain the meaning of the following Java statements.

- (a) Button deletion = new Button("remove"); [3]
- (b) g.drawLine(450, 80, 200, 80); [3]

A5. State the output of the following statements. [6]

- (a) $4 + 3 * 6$
- (b) $14 / 4$
- (c) $40 \% 20 * 5 + 2$
- (d) $24 \% 6 != 0$
- (e) $4 / 3 + 12 / 4 != 5$
- (f) $(12 + 4) \% 4 > 0$

A6. When you declare identifier, you cannot use keywords as the identifier. List THREE other requirements that must be met when declaring identifiers. [3]

A7. An Access modifier defines the circumstances under which a class or class members in a program can be accessed. Identify TWO types of access modifiers that can be used in a Java program. [2]

Section B

[60 marks]

Answer ANY TWO questions in this section.

B1.

[30 marks]

(a) Identify and correct the errors in each of the following pieces of code:

(i) if (points != 100) [3]

System.out.println("below full mark");

else

System.out.println("full mark");

(ii) public void static float(short w) [4]

{

System.out.println(w);

}

(b) You are asked to write a java program to prompt user to enter two numbers using BufferedReader object. It will display "first is bigger than second" if first number is greater than second number. It will display "first is smaller than second" if first number is lesser than second number It will display "we are the same" if first number is equal to number. Examples of the inputs and output are shown below: [20]

Enter first number

45

Enter second number

35

first is bigger than second

(c) (i) Describe the term access specifier. [2]

(ii) Which access specifier allows a method that can only be accessed by members of its own class? [1]

B2.

[30 marks]

- (a) Explain what is sentinel controlled. [2]
- (b) (i) Declare a one dimensional array weight, to store numbers of type floating. Assume that the size of the array to be 100. [3]
- (ii) You are asked to use a for loop structure to display all the values inside the weight array, and the total weight of it. [10]
- (c) Write a Java applet program which will draw a rectangle at coordinate x of 100, and y of 200. The width of the rectangle is 350 and the height of it is 250. You need to make the background of the applet in yellow color. You need to display the message "i am a rectangle" in blue color. [15]

B3.

[30 marks]

- (a) Explain the term 'recursive'. [2]
- (b) Identify and explain the TWO basic steps in a recursive method. [5]
- (c) In a Java program, explain the differences between recursion and iteration. [6]
- (d) Identify TWO benefits of using a recursive routine. [2]
- (e) Explain the meaning of the following Java statements. Both 'messageA' and 'messageB' used in the statements are string variables.
 - (i) messageB.concat(messageA) [2]
 - (ii) messageA.equals(messageB) [2]
 - (iii) messageA.length() [2]
- (f) Rewrite the following switch statements into if else statements. [9]

```
switch(k)
{
    case 's':
        p=20;
        break;

    case 'B':
    case 'b':
        p=40;
        break;

    default:
        p=60;
}
```

-END OF PAPER-