

Section A

[40 marks]

Answer ALL questions in this section.

A1. State whether below statements are valid or invalid. [10]

- (a) The java command from the Java Developer's Kit is used to execute a Java applet.
- (b) The selection structure is used to make decisions.
- (c) A symbol / is used to document a program.
- (d) If braces { } do not occur in matching pairs, this will cause a syntax error.
- (e) The length is a method which will determine the size of the array.
- (f) Infinite loops are caused when loop-continuation condition in a repetition structure never becomes true.
- (g) The init() method is invoked once when an applet begins execution.
- (h) One example of the reference data type is String.
- (i) A constant variable can be assigned with a new value after it is created.
- (j) The operator & is known as logical operator.

A2. (a) State the TWO categories of data type used in Java programming. [2]

(b) State whether each of the following statements is legal or illegal. [6]

- (i) `char sex = "m";`
- (ii) `int w = 1234567;`
- (iii) `double number = 3.5;`
- (iv) `boolean If = false;`
- (v) `short byteno = 99;`
- (vi) `String 1stname = "Peter";`

A3. Given the below operations, state the result that will be returned from each of them. [7]

(a) $24 / 7$

(b) $9 + 4 * 9 / 3 - 1$

(c) $5 \% 5 + 5 * 5 - 5 / 5$

(d) $10 * 20 \% 2 + 20 / 4 - 8$

(e) $20 / 10 * 5 + 16 / 3$

(f) $8 != 12 / 6 \parallel 6 > 21$

(g) $15 - 3 > 4 * 3 - 2 * 1$

A4. Write a Java statement to accomplish each of the following.

(a) Test if the value of the variable mark is not equal to 30. If it is, print “is not equal to 30. [2]

(b) Declare a method header getArea that takes two floats a, and b and returns a double value. [2]

(c) Increment the variable balance by 20. [2]

A5. Rewrite the below statements into switch statements. [9]

```
if(status == 1)
point=1;
else
if(status == 2 || status ==3)
point =2
else
point=3;
```

Section B

[60 marks]

Answer ANY TWO questions in this section.

B1.

[30 marks]

- (a) There are three basic constructs in programming. State which construct each of the following examples from Java is drawn from. [3]

- (i) if/else structure
- (ii) for..loop structure
- (iii) switch structure

- (b) The general format of the Java for structure is as follow:

for (expression1; expression2; expression3)
statements;

Explain the purpose of the three expressions in the above for structure. [3]

- (c) Identify the error in each of the following program segments and explain how the error can be corrected.

- (i) The following code should display the values 10 to 30. [4]

```
x = 10;  
while (x<30)  
System.out.println(x++);
```

- (ii) The following code should display the odd integers from 21 down to 1. [4]

```
for(x =21; x >= 1; x += 2)  
System.out.println(x);
```

- (d) (i) Write a method sum which will return a value of zero. [2]
- (ii) Write another method sum which receives two parameters x, and y of integer type. It will return the total value of both numbers. [4]
- (iii) Write a main method to activate the both sum method of it. [3]
- (iv) Define the object oriented term that can be derived from the part (d) (i) and (ii). [1]
- (e) Write a java program to ask user to enter two numbers. It displays the biggest number among them. [6]

Enter First Number

100

Enter Second Number

120

120 is the biggest

B2.

[30 marks]

- (a) Draw a segment of a flowchart to illustrate each of the following nested structures.
 - (i) A selection within a selection. [4]
 - (ii) A while loop within a selection. [4]
- (b) Write a Java program which will display even integers from 8 to 500 inclusive using a do..while structure. [9]
- (c) Declare a constant MAX_HOUR to hold a value of 12. [3]
- (d)
 - (i) What is the minimum, and maximum value of short. [2]
 - (ii) State the correct data type does Array belongs to. [2]
- (e) Briefly explain what escape sequence is. [2]
- (f) Explain the differences between while loop, and do while loop [4]

B3.

[30 marks]

- (a) (i) Briefly explain what is AWT. [2]
- (ii) List any THREE components of it. [3]
- (b) List and explain any THREE types of layout manager used in a Java program. [6]
- (c) (i) In java applet, we can use drawOval method() to draw a shape. State the object that can be drawn from it. [2]
- (ii) Explain the syntax of it. [6]
- (iii) Using java Applet to show the method of drawOval method. Set the background in red colour. Display the text “this is an oval” in yellow colour, and draw the oval. [11]

-END OF PAPER-