

SECTION A

[40 Marks]

Answer ALL questions in this section.

- A1. Declare an array for the given statements.
- (a) To declare 100 Student names. [2]
 - (b) To store the given float values- 100.50, 300.30, 56.75, 80.50 [2]
 - (c) To declare 5 objects of Employee class. [2]
- A2. Declare a class product, to store product name and qty. [3]
- A3. Complete the following sentences with the appropriate answer using the words given in the table below. Note that not all of the words have to be used and some may be used more than once. [10]

Init	Counter-controlled	start	compile
False	Comment	selection	run-time
True	Sorting	initialized	Syntax
applet viewer	Object-oriented	Inheritance	javac

- (a) The _____ command from the Java Developer's Kit executes a Java applet.
- (b) The _____ structure is used to make decisions.
- (c) A/an _____ is used to document a program and to improve its readability.
- (d) If braces { } do not occur in matching pairs, this will cause a _____ error.
- (e) Java software is an example of a/an _____ language.

Please turn over

- (f) Infinite loops are caused when loop-continuation condition in a repetition structure never becomes _____.
- (g) The _____ method is invoked once when an applet begins execution.
- (h) The processing of placing the elements of an array in order is called _____ the array.
- (i) A constant variable must be _____; it cannot be modified after it is created.
- (j) The concept of a low-level class deriving some of its behavior from a high-level class is called _____.

A4. Pick a correct statement or phrase to complete the sentence. [10]

(a) Java programming can support

- (i) only one dimension array.
- (ii) less than two dimension array.
- (iii) more than two dimension array.
- (iv) only two dimension array.

(b) Given the following

String product= "Shampoo";

int size = product.length();

What is the value of variable size?

- (i) 5
- (ii) 7
- (iii) 9
- (iv) 11

Please turn over

- (c) Which of the following is not found in the Java Development Kit?
- (i) text editor
 - (ii) notepad
 - (iii) appletviewer
 - (iv) object design
- (d) Which of the following is not a relational operator in Java programming?
- (i) =
 - (ii) ==
 - (iii) >=
 - (iv) <
- (e) Which of the following is a logical operator in Java programming?
- (i) *
 - (ii) //
 - (iii) |
 - (iv) &&
- (f) Which of the following declaration is correct?
- (i) Boolean switch = true;
 - (ii) boolean switch = true;
 - (iii) boolean Switch = false;
 - (iv) Boolean Switch = FALSE;

Please turn over

- (g) Which of the following declaration of an array is correct?
- (i) `int number[] = new int;`
 - (ii) `float [] number = { 2.3, 5.4, 3.9 };`
 - (iii) `int number[];`
 - (iv) `int[] number = new int;`
- (h) Which of the following statement will display this message “Have a nice day” three times on the screen?
- (i) `for (int count=1;count<=3; count++) System.out.println(“Have a nice day”);`
 - (ii) `for (int count=1;count>=3; ++count) System.out.println(“Have a nice day”);`
 - (iii) `for (int count=1;count<3; count++) System.out.println(“Have a nice day”);`
 - (iv) `for (int count=1;count=3; ++count) System.out.println(“Have a nice day”);`
- (i) What will the following code display?
- ```
int no=0;
int total=0;
do
{
 total += no;
 ++ no;
}while (no != 5);
System.out.println(“The total is” + total);
```
- (i) 6
  - (ii) 10
  - (iii) 3
  - (iv) 8

***Please turn over***

(j) Which of the following declaration of a method is correct?

- (i) `public void sum( int A, B);`
- (ii) `public void sum(int A; int B)`
- (iii) `public void sum( float A, int B)`
- (iv) `public void sum(A,B)`

A5. State whether each of the following statements are true or false. [5]

- (a) When declaring a method header that returns a value, the keyword 'void' is sometimes used to declare the method header.
- (b) It is an error if a Java file name does not end with .java extension.
- (c) A TextField can be created with or without initial text.
- (d) A loop that never ends is called a finite loop.
- (e) An asterisk (\*) can be used as a wildcard symbol to represent all the classes in a package.

A6. Write a Java statement or a set of Java statements to accomplish the following which perform the sum the odd integers between 1 and 99 using **For** structure. Assume the integer variables **sum** and **count** have been declared. [6]

*Please turn over*

**SECTION B**

**[60 Marks]**

**Answer ANY TWO questions from this section.**

B1.

[30 marks]

- (a) List and briefly describe *THREE* basic program constructs. Draw a flowchart to represent each of the programs constructs. [12]
- (b) A segment of a program requires the user to enter a book title. The entry entered by the user will then be compared to the first element of an array. The program will then display the details of the book if it matches. However, if it does not match, the program moves to the next element of the array and then compares again. This process will be repeated until the record is found. However, if the record is not found, a message will be displayed to notify the user. There are  $n$  titles currently in the array. Construct a flowchart to show the segment above. [6]
- (c) Declare a class constructor employee. The constructor must accept integer id and String department as an arguments and print the same. [6]
- (d) Given the following formulae to calculate the areas of square and rectangle:  
Area of square = length\* length  
Area of Rectangle = length\*width  
Define two methods named **area** to calculate the area of the square and rectangle. [6]

***Please turn over***

B2.

[30 marks]

- (a) Write a program that stores vowels (A, E, I, O, U, a, e, i, o, u) in an array. Ask the user to enter a character. The program should indicate whether the entered character is a vowel. [10]
- (b) Briefly explain what is exception and give a simple example in Java programming. [10]
- (c) Given the following array declaration statements, indicate whether the statements are valid or invalid. [5]
- (i) `char s[10] = "Matthew";`
  - (ii) `String[] s = {"Matthew", "Mark"};`
  - (iii) `String s[] = 'M', 'a', 'r', 'k';`
  - (iv) `String s = {"Mark", "Mary"};`
  - (iv) `char s[5] = { 'a', 'b', 'c', 'd', 'e', 'f' };`
- (d) Write down the appropriate String method for the given statements [5]
- (i) To join 2 string objects.
  - (ii) To determine the number of characters in a string.
  - (iii) To convert a string object into an integer.
  - (iv) To compare the equivalence of 2 string objects and is case sensitive.
  - (v) To convert the string to a new character array.

***Please turn over***

B3.

[30 marks]

- (a) Write an applet program which draws a straight line using the `drawLine()` method. The **x** and **y** coordinate of the first point is 10 for the **x** coordinate and 10 for the **y** coordinate and the second pair of coordinates is 230 for the **x** coordinate and 95 for the **y** coordinate. [6]
- (b) Name any five window components found in an applet. [5]
- (c) Rewrite the following selection structure into a switch construct. [6]  
if (course == 'C' || course == 'c')  
    System.out.println("Diploma course");  
else  
if (course == 'B' || course == 'b')  
    System.out.println("Advanced course");  
else  
    System.out.println("Tourism course");
- (d) (i) Define what is a two-dimensional array. [2]
- (ii) Write a class called *Finance* that contains two members. The first member is manager name of type string; the second member is payment, a two dimensional array of double type. [2]
- (iii) Implement a constructor that receives a parameter `managerName`. The purpose of this constructor is to initialize all the members in the above class. It also initialises the array to be able to store payments received in 12 months, with 31 days per month. [3]

***Please turn over***

- (e) Identify and correct the errors in each of the following:
- (i)
- ```
while (c<=5)  
{  
    product *= c;  
    ++c;
```
- [2]
- (ii)
- ```
if (gender == 1)
 System.out.println("woman");
else;
 System.out.println("man");
```
- [2]
- (f) What is a syntax error and logical error in Java programs?
- [2]

**-END OF PAPER-**