



MALAYSIAN INSTITUTE OF INFORMATION TECHNOLOGY

**FINAL EXAMINATION
JANUARY 2016 SEMESTER**

SUBJECT CODE	:	ISB10103
SUBJECT TITLE	:	PRINCIPLES OF COMPUTER PROGRAMMING
LEVEL	:	BACHELOR
TIME / DURATION	:	2.00 pm – 4.30 pm (2 HOURS 30 MINUTES)
DATE	:	22 MAY 2016

INSTRUCTIONS TO CANDIDATES

- 1. Please read the instructions given in the question paper CAREFULLY.**
- 2. This question paper is printed on both sides of the paper.**
- 3. Answer ALL questions.**
- 4. Please write your answers on the answer booklet provided.**

THERE ARE 5 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

SECTION A (100 MARKS)**INSTRUCTION: Answer ALL questions.****Question 1**

(a) Below are some invalid identifiers. Provide reasons for invalid.

- i. 30Hours
- ii. Get Information
- iii. square-1
- iv. byte
- v. \$123

[5 marks]

(b) Write the declaration for an array named `academicStaff` that stores 133 names.

[3 marks]

(c) What would be printed out as a result of the following codes?

```
int x = 30, y = 20, z = 10;
x += y - z;
System.out.println("x = " + x);
```

[4 marks]

(d) Determine the value (True or False) of each of the following Boolean expressions:

- i. `((5 < 10) || (6 < 7))`
- ii. `((0 <= 0) && (9 >= 9))`
- iii. `((1 > -1) && (-2 > -1))`

[6 marks]

(e) By referring to the code segment given below, write the method header for method `sum`.

```
public static void main (String [ ] args)
{
    Calculate cal = new Calculate ( );
    cal.sum (8,5);
}
```

[7 marks]

Question 2

(a) Briefly explain syntax error. Give an example.

[3 marks]

(b) Learn the following codes. Give your opinion on the codes during execution.

```
public static void main(String[] args)
{
    int n=22;
    while (n <= 32)
    {
        System.out.println( n );
    }
}
```

[4 marks]

(c) Find errors and suggest suitable correction for Listing 2.1. Use the following table format to answer this question.

Line number	Syntax error	Suggested Correction

```

1 public class ShowErrors
2 {
3     public static void main(String[] args)
4     {
5         int i;
6         int j=5;
7
8         if(j>3)
9             System.out.println(i+4);
10
11        System.out.println(m);
12        System.out.println(j+2=7);
13        System.out.println(j+1.5);
14    }
15 }
```

Listing 2.1

[9 marks]

(d) The following question is based on program **Listing 2.2** . Find errors and suggest suitable corrections. Use the following table format to answer this question:

Line number	Error	Suggested correction

```

1 public class Loop1
2 {
3     public static void main(String[] args)
4     {
5         int i=0;
6         while (i>5);
7         {
8             System.out.println("i is "+i);
9             i+=1;
10        }
11    }
12 }
    
```

Listing 2.2

[9 marks]

Question 3

(a) Give the output when the following code **Snippet 3.1** is executed, if the value of cholesterol is 6.3.

```

if(cholesterol < 5.17)
{
    condition ="less than 5.17.";
    result ="Desirable";
}
else if(cholesterol >= 5.17 && cholesterol < 6.20)
{
    condition="between 5.17 and 6.20.";
    result="Borderline High Risk";
}
else if(cholesterol >= 6.20)
{
    condition = "greater than 6.20.";
    result ="High Risk";
}
else
    result="Invalid";

System.out.println(" To determine risk of heart desease.");
System.out.println(" Your cholestrol is " +cholesterol+ " which is "+condition);
System.out.println(" The result is " +"\n"+result+"\n.");
System.out.println(" Repeat the test in "+2+1+" days.");
    
```

Snippet 3.1

[8 marks]

- (b) Give the output when the following code (**Snippet 3.2**) is executed:

```
int value = 2;
int data = 8;
while (data < 11)
{
    value = value + 3;
    data++;
    System.out.println( data+"*" +value++);
}
System.out.print( data+"\n"+value++);
```

Snippet 3.2

[8 marks]

- (c) Wawasan Aerobic would like to offer a healthy event for MIIT lecturers. In order to get more involvement from matured lecturers, some amount of discount is given. You are required to create a flowchart to calculate admission fee for each of 133 participants. The basic fee is RM80.00 per participant. A discount rate is given based on age category (refer table below). Display new fee for each participant.

Age Category	Participant group	Admission Discount Rate
Above 55	Golden	5%
35 - 55	Silver	3%
Below 35	Bronze	-

[9 marks]

Question 4

- (a) You are required to create a program for Food4Love to calculate total donation received from a number of wise donators. The number of donators will be determined by the user.

Your solution should consist of the followings:

- i. Create `DonationCollection` class containing `readDonator ()` that reads the number of the donators. Return the number.
[Hint: `int readDonator()`]
- ii. `calculateTotalDonation ()` method, will read donation from all donators and calculate the total donation. Return the total.
[Hint: `double calculateTotalDonation(int)`]
- iii. `printSummary ()` method will display the amount of total donation collected. Calculate average donation and display the average amount as well.
[Hint: `void printSummary(double, int)`]
- iv. `main ()` method will invoke all methods. It should create one object and invoke the methods defined in items (i), (ii) and (iii), to test whether they work according to the specification.

[25 marks]

END OF QUESTION