Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER II
SESSION 2016/2017

COURSE NAME	:	JAVA PROGRAMMING
COURSE CODE	:	BIT 33803
PROGRAMME CODE	:	BIT
EXAMINATION DATE	:	JUNE 2017
DURATION	:	2 HOURS AND 30 MINUTES
INSTRUCTION	:	A) ANSWER **ALL** QUESTIONS B) ANSWER IN THIS QUESTION BOOKLET

THIS QUESTION PAPER CONSISTS OF **NINE (9)** PAGES

Q1 Determine the output for **Figure Q1.**

```
public class Trolls{
   public static void eat(Troll tr){
      System.out.println(tr.toString());
   }
   public static void main(String[] arg){
      eat(new Branch());
      eat(new Creek());
      eat(new Poppy());
   }
}
class KingPeppy extends Troll{
   public KingPeppy(){
      this("I am King Peppy.");
   }
   public KingPeppy(String st){
      System.out.println("Trolls are happy, "+ st);
   }
}
class Poppy extends KingPeppy{
      public String toString(){
            return "I love to sing!";
   }
   public Poppy(){
      super("I am Princess Poppy!");
   }
}
class Branch extends KingPeppy{

}
class Creek extends Troll{
   public String toString(){
      return super.toString()+" and I am happy!";
   }
}
class Troll{
   public String toString(){
      return "I am from troll village";
   }
}
```


Figure Q1

(10 marks)

Answer:

Q2 Draw a class diagram for the scenario in **Figure Q2** complete with all associations and appropriate multiplicities.

A hockey league is made up of at least four hockey teams. Each hockey team is composed of six to twelve players, and one player captains the team. A team has a name and a record. Players have a number and a position. Hockey teams play games against each other. Each game has a score and a location. Teams are sometimes lead by a coach. A coach has a level of accreditation and a number of years of experience, and can coach multiple teams. Coaches and players are people, and people have names and addresses. Draw a class diagram for this information, and be sure to label all associations with appropriate multiplicities.

Figure Q2

(10 marks)

Answer:

Q3 (a) Write a class definition for class named `Address`. An address has a house number, a street, a city, and a state. Supply the class with two constructors: a no-argument constructor and a constructor with argument to initialize the data. Each of the data field only has their own accessor and mutator methods to access and set their values too.

(20 marks)

Answer:

(b) Write a `print` function that prints the address with the house number on one line while the street, city and state on the next line.

(5 marks)

Answer:

Q4 (a) Write a program that allows user to enter a length value in a class called `LengthConverter`. This program will calculate the conversion of length measure either from feet to centimeters or from centimeters to feet unit. The interface is shown in **Figure Q4**.

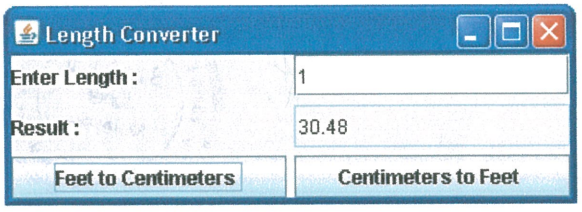
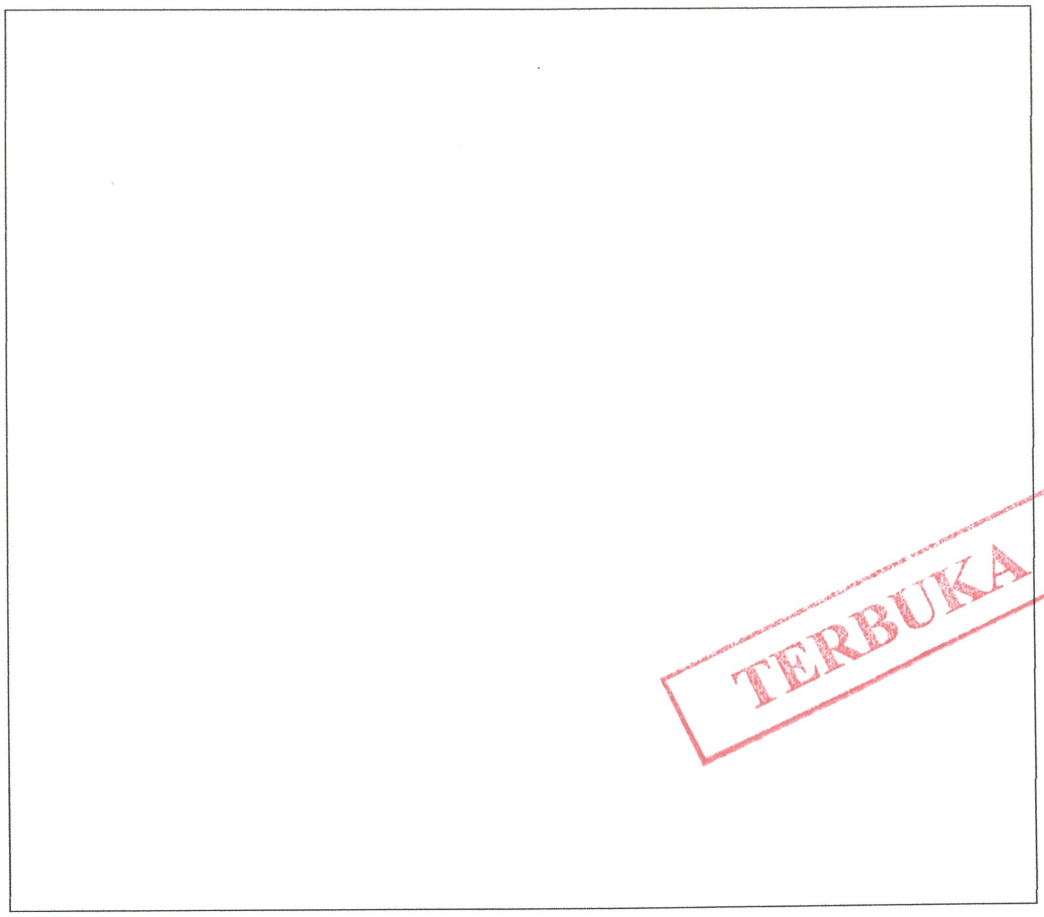


Figure Q4

(15 marks)

Answer:

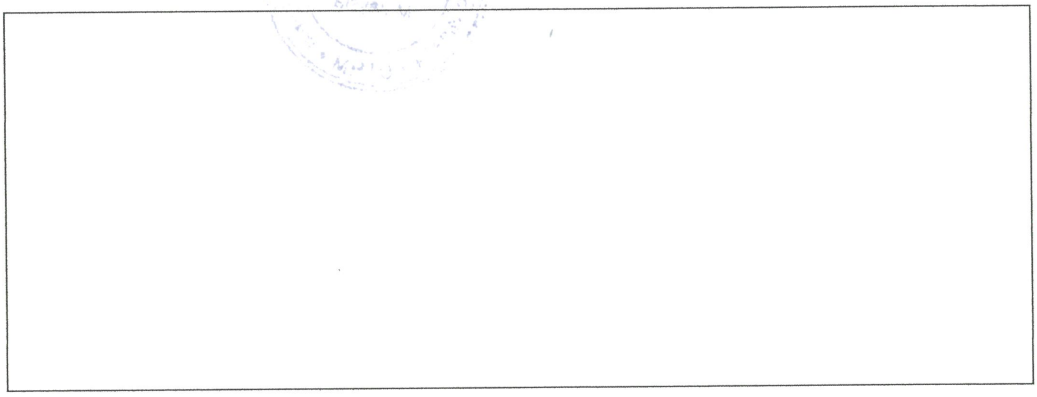


(b) Write an `Action Listener`class for the button `jbtConvert1`. The formula for `Feet` and `Centimeters`are as follows:

```
Feet = length * 30.48
Centimeters = length / 30.4
```

(10 marks)

Answer:



Q5 Determine the output of the Java program in **Figure Q5** if the user key in `191` as the input . Justify your answer.

```
import javax.swing.JOptionPane;

public class MyException {
   public static void main (String[] args){
      String inputStr = JOptionPane.showInputDialog(null);
      int number;
      try{
          number = Integer.parseInt(inputStr);
          if (number > 100){
              throw new Exception("Out of Bound");
          }
      }

      catch(NumberFormatException e){
          System.out.println("Cannot convert to int");
      }
      catch(Exception e){
          System.out.println("Error: " + e.getMessage());
      }
      finally{
          System.out.println("DONE");
      }
   }
}
```


FigureQ5

(10 marks)

Answer:

Q6 Write a program based on the scenario in **Figure Q6**.

An annual appraisal for a lecturer is based on four components; teaching, supervising, research, and publishing with a weightage of 25 marks each. The program reads the marks from an input file.

Input File

Princess Poppy	24.3	25	11.2	9.5
King Peppy	12.8	8.3	22.1	24

Then, the program will calculate the total marks for the annual appraisal and assign a performance status based on the following scale.

Sales	Performance Status
85-100	Excellence
70-84	Good
50-69	Mediocre
0-49	Weak

Finally, the program will write the annual appraisal marks and staff performance for each staff into an output file.

Output File

Princess Poppy	70.0	Good
King Peppy	67.2	Mediocre

FIGURE Q6

(20 marks)

Answer:

- END OFQUESTION -