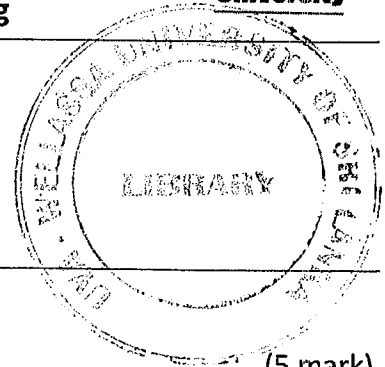
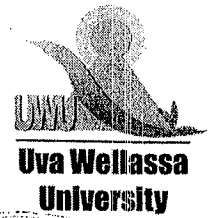


Uva Wellassa University of Sri Lanka
Faculty of Science and Technology
Department of Computer Science and Technology
200 level 1st Semester Examination – May/July 2017
CST221-2 Object Oriented Programming



Instructions to candidates

Duration: Two (02) hours

Number of questions: Four (04)

Answer all questions

Mark allocation: 100

1.
 - a. Explain the importance of Java Bytecode. (5 mark)
 - b. List four (04) usages of 'this' keyword in Java. (4 mark)
 - c. Briefly mention the purpose of the underlined keywords in the following Java class. (10 mark)

```
public class Myclass  
{  
    public static void main (String[] args)  
    {  
        System.out.println("Hello world");  
    }  
}
```
 - d. Define instance variable, class variable and local variable. (6 mark)

2.
 - a. State the difference between a static method and a non-static method in Java. (4 mark)
 - b.
 - i. Explain the purpose of using constructors in Java programming. (6 mark)
 - ii. What is the return value of a constructor? (2 mark)
 - c. Why method signature is important in Java? (5 mark)
 - d. Write simple java code segments (not a complete program) to perform the following tasks.
 - i. Using the conditional operator check if the given integer value is odd or even. (4 mark)
 - ii. Write an infinite loop using a 'for' statement. (4 mark)

3.

- a. Define the following terms in Java.
- i. Encapsulation (2 mark)
 - ii. Abstract class (2 mark)
 - iii. Interface (2 mark)
- b.
- i. What is meant by Polymorphism in Java? (2 mark)
 - ii. Explain how you could achieve Polymorphism in Java. (4 mark)
- c. You are supposed to write a Java program to manipulate student information. Each student is represented by registration number, name, date of birth, degree program and group attributes. Write a class to represent student. Your class must include a default constructor, parameterized constructor and a display method. (8 mark)
- d. Bank is a class that provides a method to get the rate of interest. HSBC, BOC and HNB banks provide 10%, 11% and 9% rate of interest respectively. Briefly explain the runtime polymorphism using the above scenario. (5 mark)

4.

- a. What is the difference between an error and an exception in Java? (5 mark)
- b. Briefly explain the following terms giving an example for each.
- i. Checked exception (4 mark)
 - ii. Unchecked exception (4 mark)
- c. Rewrite the following program by handling the exception(s). Underline the exception(s) you corrected. (6 mark)

```
public class ExceptionHandle{
    public static void main(String arguments[])
    {
        int x = 10;
        int y = 0;
        int result = x/y;
        System.out.println("Handle the exceptions");
    }
}
```

- d. Write reasons for giving explicit calls to close the file in a program when handling I/O files in Java. (6 mark)