

**Part B**

**Instructions to candidates**

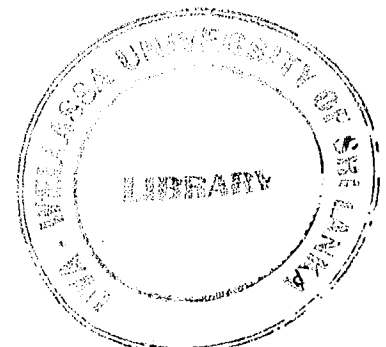
**Duration:** One (01) hour

**Number of questions:** Two (02)

**Answer all questions**

**Mark allocation:** 60

- 1.
- a. Why Java main method is static? (3 mark)
  - b.
    - i. What is the purpose of a default constructor? (3 mark)
    - ii. Explain the return value of a constructor. (4 mark)
  - c.
    - i. What is meant by method signature? (2 mark)
    - ii. Why method overloading is not possible by changing the return type of a method? (3 mark)
  - d. How can we overload the main() method? (2 mark)
  - e. Using an example, explain the reason for multiple inheritance is not supported through classes. (5 mark)
  - f. Bank is a class that provides a method to get the rate of interest. HSBC, BOC and HNB banks could provide 10%, 11% and 9% rate of interest respectively. Explain the runtime polymorphism using the above scenario. (8 mark)



2.

- a. Hiding internal details and showing functionality are the primary concern of abstraction and encapsulation.
- i. What is meant by encapsulation in Java? (2 mark)
  - ii. What are the advantages of encapsulation in Java? (4 mark)
  - iii. Define abstract class in Java. (2 mark)
  - iv. Define interface in Java. (2 mark)
- b. Tabulate the difference between abstract class and interface in Java. (8 mark)
- c. Briefly explain the following terms
- i. Checked Exception (2 mark)
  - ii. Unchecked Exception (2 mark)
  - iii. Error (2 mark)

- d. Rewrite the following program by handling the exception(s).

```
public class ExceptionHandle{
    public static void main(String arguments[])
    {
        int result=50/0;
        System.out.println("Handle the exceptions");
    }
}
```

(6 mark)