

## Java Assessment -Part IV-Theory

[Max Marks-50]

[Java Concurrency, functional & JDBC]-30<sup>th</sup> Aug 2022

1.5 Hrs

- I. Considering the following functional interface , demonstrate the implementation of it on your own class using anonymous inner class & lambda Expressions side by side **6M**

```
Public interface Interest{  
    public void callInt();  
    public static double calculateStdInt(double pr,int nm,double rate){  
        return pr*nm*rate/1200;  
    }  
}
```

- II. Assume there is an Employee class with the members (int empno, String name, String job, double salary, int deptno), create a collection of Employee objects and sort them by name in reverse order using lambda Expression. **6M**
- III. Demonstrate the usage of PreparedStatement by updating the Jobs and salaries for any 3 employees by accepting their empno, job and salary using Interactive inputs. **6M**
- IV. Considering there is a stored procedure : sptrans(ano int,ttype char,double amt) ,demonstrate the calling of this stored procedure from JDBC code. **6M**
- V. Explain the advantages of Thread pool and demonstrate the usage of multithreading through ThreadPool using Executor framework. Take at least 3 threads. **6M**
- VI. Demonstrate producer and consumer pattern by writing alphabets A-Z from a producer thread to a concurrent Queue and read all those alphabets from the Queue using Consumer thread. Implement this either using ArrayBlockingQueue or ConcurrentLinkedQueue. **8M**
- VII. Demonstrate the usage of ConcurrentHashMap<String,String> by adding couple of elements and read them using forEach loop with lambda expressions **6M**
- VIII. Explain the differences between Synchronized block and Lock API and demonstrate the usage of Locks API with one of the implementations. **6M**