

JK Lakshmipat University Jaipur
INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Examination, May 2019
B. Tech. in Computer Science Engineering, Semester VI & IV

Roll No.....

CSE428 : Enterprise Programming using Java

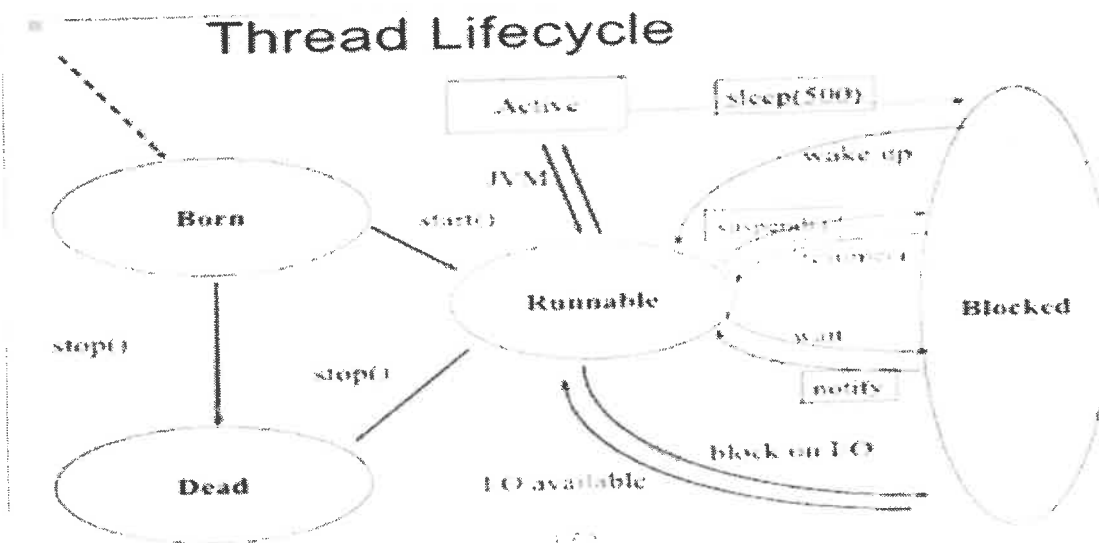
Time: 2 hours

Max. Marks: 100

Instructions to students:

1. Do not write anything other than your roll number on question paper.
 2. Assume suitable data wherever required and mention it clearly.
 3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics/ flow chart wherever, required are an integral part of the answer.
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- Q.1 Implement following scenario in Java to accomplish task: 15
- (i) Input an array of integer number
 - (ii) Sum the elements of the array, if during the summing of elements, the running sum becomes zero it should throw an exception.
 - (iii) If exception is not thrown, it should display the final sum of elements.
- Q.2 Design a class named Time with *hours*, *minutes* and *seconds* (all of type int) as its data members declared in private section of the class. Define the following constructors for the class: 15
- (i) Zero argument constructor that initialize the *hours*, *minutes* and *seconds* data members to 2, 10, and 35 respectively.
 - (ii) Parameterized constructor that takes time in *seconds* as its only argument and initialize the *hours*, *minutes* and *seconds* data members with appropriate values.
 - (iii) Parameterized constructor which takes three arguments, all of which are declared with default values as 2, 10 and 35 respectively, and initializes the *hours*, *minutes*, and *seconds* data members with corresponding arguments.
- Q.3 Discuss the significance of Deployment Descriptor (web.xml) in Enterprise Programming. Consider the following diagram and elucidate on the thread lifecycle by referring to the given diagram below. 15



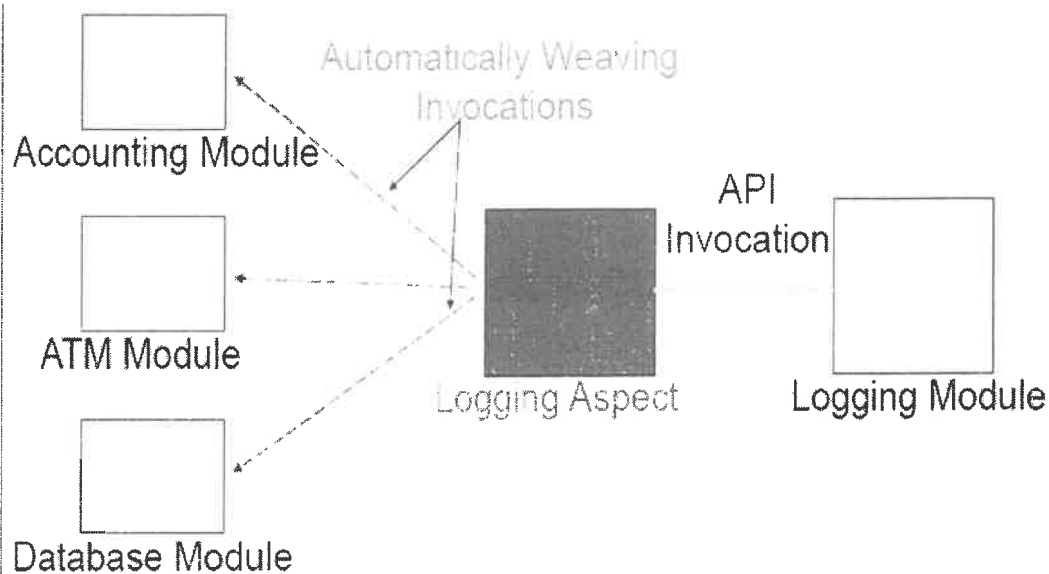
Q.4 Write a code construct of servlet which accepts two numbers using the POST method and displays the smaller one. Differentiate between Servlet and JSP. 15

Q.5 Consider the following Java Source Code given below – Complete the part in the code where it is mentioned in java comments “//to be completed by the student.” Give the output of the completed java code as well in your answer. 10

```

public class MultipleThreadDemo {
    private static class ParallelTask implements Runnable {
        @Override
        public void run() {
            // to be completed by the student.
        }
    }
    public static void main ( String[] args) {
        // create three threads but none should start until they are called
        // to be completed by the student.
        // now start all the three threads
        // to be completed by the student.
    }
}
  
```

Q.6 Consider the following figure below. 15



Now, by looking at the above figure, elucidate on the following terminology:

i.) Logging Aspect, ii) Automatic Weaving Invocations, ii) Concerns. How does Aspect Oriented Programming methodology fit into the above scenario - as shown in the above figure?

- Q.7 Elucidate on the concept of dependency injection/inversion of control (IoC) functionality provided by Spring framework in Java. Also, consider the following code fragment and describe the methodology by which it provided inversion of control/dependency injection in that particular Java Application using Spring MVC. Also, name the two types of dependency injection that Spring MVC supports. 15

```
<beans>
  <bean name="person" class="examples.spring.Person">
    <property name="email">
      <value>my@email.address</value>
    </property>
  </bean>
</beans>
```

*** beans are accessed by there "bean name"

Interpretation of the above code:

```
Person person = new Person();
person.setEmail("my@email.address");
```

