120-23 → 11 to 14

Student ID: _____   Name: SOLUTION _____

Time: 60 minutes

Max Points: 70

IMPORTANT NOTE:
1. There are 6 pages in the question paper, make sure that you have received them all!
2. For all multiple choice questions correct option carries 2 marks whereas wrong answer carries -0,5 mark.
3. Write your IDs on every sheet.
4. **Answers that are difficult to read shall simply be ignored.**

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1. Check most correct option in following questions

    i. *(1-5)* What is correct about "Dependency Inversion Principle"
        A. It lets us reduce the dependencies
        B. It is implemented through Polymorphism
        C. It moves dependencies to "parent class"
        D. All above are correct statements ✓

    ii. Which of following is NOT correct about JDBC driver-
        A. You require JDBC Driver for running a program that requires communicating to a RDBMS.
        B. You need JDBC Driver at Compile Time ✓
        C. A JDBC driver is specific to a DBMS
        D. A JDBC program is not specific to a DBMS

    iii. The file "persistence.xml" is used for
        A. Defining JPA dependencies
        B. Defining JNDI resources
        C. Defining persistence unit ✓
        D. Defining application flow

    iv. Which of following component is NOT part of JDBC API -
        A. "java.sql.DriverManager"
        B. "java.sql.Driver"
        C. "org.postgresql.Driver" ✓
        D. "javax.sql.DataSource"

    v. Which of following is NOT method of entity manager -
        A. persist
        B. remove
        C. insert ✓
        D. refresh

    vi. Data Access Object
        A. is a strategy ✓
        B. is an interface in Java Persistence API
        C. is a JPA component
        D. is a Hibernate component

vii. Which of following is NOT an advantage of multi-tier application -

A-1

A. Efficiency
B. Code reusability
C. Scalability
D. Availability

viii. Which tier component Servlet object is?

A. Client Component
B. Presentation Tier component
C. Business layer component
D. Can be used at any tier

ix. Assuming that Customer Service is a business tier component.
What three-layer factoring violation do you see in following service component

```
public class CustomerService {

    public void saveCustomer(HttpServletRequest request) {



    }

}
```

A. We cannot determine unless complete implementation is known
B. Business component having dependency on Presentation Tier component
C. No there is no such violation
D. Presentation Tier component having dependency on business tier

x. Which tier component Hashmap is-

A. Client Component
B. Presentation Tier component
C. Business layer component
D. Can be used at any tier

xi. "Business Object (BO)" refers to

A-20

A. Any object that works in business tier are business objects
B. Objects that represents data model of the application
C. Objects that are in business tier and serve client requests

xii. URL Mapping in servlet configuration is

A. Specifying how URL is to be handled
B. Specifying Servlet class name for a URL
C. Specifying what URLs are allowed in a Java Web application
D. All of them

xiii. What is correct about "getInitParameter" method of Servlet object
- A. It returns parameters that are specified through init method of servlet and done at servlet load time
- B. It returns servlet parameters that are defined as servlet configuration parameters specified
- C. Both are correct

xiv. Which of following is undesirable
- A. Business Tier Depending on Presentation Tier Components
- B. Business Tier Depending on Data Access Components
- C. Presentation Tier depending Business Tier Components
- D. None of above

xv. Which of following Annotations is mandatory for a JPA entity -

A-9
- A. @Column
- B. @Id
- C. @Table
- D. @PrimaryKey

xvi. Which of following annotation is NOT related to Relationship Mapping -
- A. @ManyToOne
- B. @Column
- C. @JoinColumn
- D. @JoinTable

xvii. Use of @JoinColumn is to
- A. Define Foreign Key relationship
- B. Define Many to One relationship
- C. Define All relationship
- D. None of above

xviii. Recall scenario of one of the Labs, "visitor tracking application for a residential society". Is creating two separate classes "Visitor" and "House" is a correct solution?
- A. Yes, because these are two different concepts
- B. No, creating two classes is incorrect, they represent single concept of visitor
- C. Does not really matter, whether we create two classes, or create a single class combining functionalities of both classes

xix. Which of following is NOT correct about Dynamic query-
- A. Faster to execute
- B. Helps in avoiding SQL injection
- C. It is a query, where some part of the query becomes known at run-time
- D. Can be executed through prepared statement

xx. What is return type of a JPQL query
- A. A List of Rows
- B. A List of Entity Objects
- C. A List of Objects
- D. All of above are correct

xxi. Which of the servlet object that does not provide setAttribute
   A. Request object
   B. HttpSession object
   C. Servlet Object
   D. None of above

xxii. Which of following is correct about Spring
   A. Supports JPA
   B. Support MVC
   C. Provides DAO
   D. All above

xxiii. Responsibility of "Business Tier Façade" object is
   A. Act as business tier gateway for presentation tier
   B. Act as data access layer gateway in business tier
   C. There is no such object

2. Suppose a Java Web container currently has 15 requests from 10 different clients for a ServletA. Assuming that this is only servlet currently loaded   [4]

   i. How many instances of ServletA will be there in web container? _____1_____

   ii. How many instances of request object will be there in web container? __15_____

   iii. How many request processing threads are running? _____15_____

   iv. How many instances of ServletConfig object? _____1_____