QUIZ 3

1. **Which of the following is <u>not</u> true about UML diagrams?**

a. Sequence diagram and activity diagrams are examples of UML behavioural diagrams
b. **A deployment diagram is an example of a UML behavioural diagram**
c. A deployment diagram is related to the component diagram because the components are deployed using the deployment diagrams.
d. A deployment diagram is useful to system administrators as it describes the mapping of the resources to the environment

2. **Choose the in-correct statement in the following statement.**
    a. The basic building block of SOA is the *service*
    b. Web services are a preferred and popular realisation of SOA
    c. **SOA emphasises implementing software modules with the same technology**
    d. SOA is typically used in B2B applications
    e. SOA is ideal to wrap legacy software as reusable services

3. A company releases a new software, and allows the customer to register for a "free-trial" period. The company wishes to build an automated application, that tracks customer's free trial registrations and at the end of the free trial period, if the customer has not notified through email to cancel the "free trial", the application should automatically renew the customer's license for a period of 12 months and accordingly charge the customer's credit card. Which style of architecture would best suit to implement the above application? The credit-card payment service is provided by a third-party service provider.

    a. P2P
    b. Publish Subscribe
    c. **Service Oriented Architecture**
    d. Pipe and Filter
    e. A web-based client-server architecture based on a HTTP request/response

4. **Which of the following statements are <u>correct</u>?**
    (In the original quiz, both answers (b) and (c) were correct. Hence, you scored a mark if you chose either one of the answers)
a. MVC architecture and 3-tier client-server architecture imply the same architectural style
b. **A traditional Pipe and Filter architecture has poor fault tolerance, as the entire pipe-line crashes if one filter crashes**
c. **P2P networks are the cheapest method of distributing content because they use the bandwidth of peers, not the bandwidth of the content's creator.**
d. An email server is an example of shared data space architecture

5. **The relational schema for two tables are given as:**

Customer : { client_id: integer, client_name: varchar, age: integer}.

Investment: { property_id:integer, property_address: varchar, market_value: float , client:integer }

The relation **Investment** has an attribute **client** which must refer to a valid **client_id** in the relation **Customer**

This is an example of:

a. **Referential Integrity constraint**
b. Domain constraint
c. Key constraint
d. Primary Key constraint

6. **Which of the following statements is incorrect about a relation in the relational data model?**

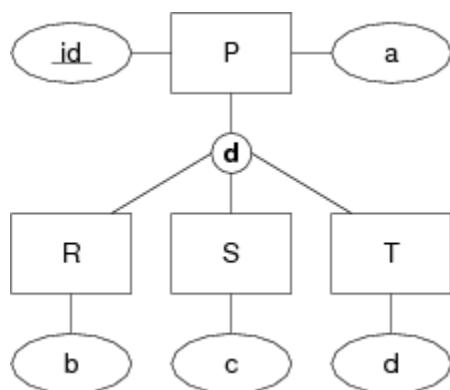a. A relation can be used to model an entity-set in the ER model
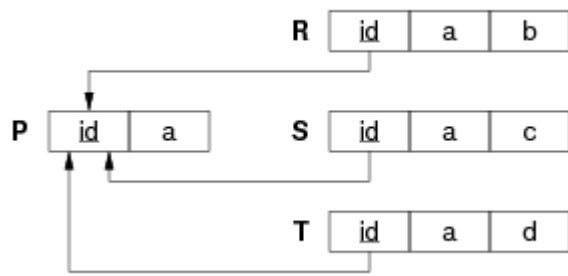b. Every relation has a primary key
c. A relation can also be used to model relationship sets
d. **Attributes in a relation can be atomic or composite**
e. An instance of a relation is a set of tuples of attribute values

7.

The relational model above represents:

    a. ER-style mapping for a class hierarchy

    b. OO-style mapping for a class hierarchy

    c. Single-table style for a class hierarchy

    d. None of the above

8. **Which of the following statements is incorrect about an ER model ?**

    a. A **hobbies** attribute for a **Student** entity-set has values = {diving, tennis}. This is an example of a multi-valued attribute

    b. A weak entity-set does not have a primary key

    c. An entity-instance in an ER model is similar to an object instance and an entity-set is similar to a class

    d. In an ER model, two entity-instances can have the same set of attribute values