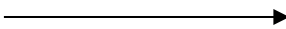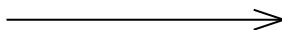## 1. What is an Activity Diagram What are its purpose?

Activity diagram can be used to model different aspects of a system. At a high level, they can be used to model business activates in an existing or potential system.

Activity diagram can be used for the following purpose:

1) To model a task
2) To describe a system function that is represented by a use case.
3) In operation specifications, to describe the logic of an operation.
4) In USDP to model the activities that make up the life cycle.

2. What is the difference between synchronous and asynchronous?

Synchronous message	Asynchronous message
Synchronous message or procedural call is shown with a full arrowhead. It causes the invoking operation to suspended execution until the focus of control has been returned.	Asynchronous message is shown with an open arrowhead. It does not cause the invoking operation to halt execution while it awaits a return.

3. How does a collaboration diagram differ from class diagram?

A collaboration diagram shows only those classes that collaborate to provide the functionality of a particular use cases (or operation); the links that are shown are those that are required for that purpose.

A class diagram typically shows all the classes in a particular package and all the associations between them.

4. What do you mean by Prototyping? What are the steps to prepare prototype?

In software development a prototype is a system or a partially complete system that is built quickly to explore some aspect of a system requirements and that is not intended as the final working system.

Main system require to prepare prototype
1) Perform an initial analysis.
2) Define prototype objectives.
3) Specify prototype.
4) Construct prototype.
5) Evaluate prototype and recommend change.

5. Define various levels of testing such as

- **unit testing**
  Unit testing is a method by which individual units of source code, sets of one or more computer program modules together with associated control data, usage procedures, and operating procedures, are tested to determine if they are fit for use.
- **integration testing**
  Integration testing is the phase in software testing in which individual software modules are combined and tested as a group. It occurs after unit testing and before validation testing. Integration testing takes as its input modules that have been unit tested, groups them in larger aggregates, applies tests defined in an integration test plan to those aggregates, and delivers as its output the integrated system ready for system testing.

- **sub-system testing**

  This phase involves testing collections of modules which have been integrated into sub-systems. Sub-systems may be independently designed. The most common problems which arise in large software systems are sub-system interface mismatches. The sub-system test process should therefore concentrate on the detection of interface errors by rigorously exercising the interfaces.

- **system testing**

  Sub systems are integrated to make up the entire system. The testing process is concerned with finding errors that result from unanticipated interactions between sub-systems and system components. It is also concerned with validating that the system meets its functional and non-functional requirements.

- **acceptance testing**

  This is the final stage in the testing process before the system is accepted for operational use. The system is tested with data supplied by the system procurer rather than simulated test data. Acceptance testing may reveal errors and omissions in the system requirements definition because the real data exercises the system in different ways from the test data. It may also reveal requirements problems where the system's facilities do not really meet the user's needs or the system's performance is not acceptable.

6. What Class.forName will do while loading drivers of JDBC?

It is used to create an instance of a driver and register it with the DriverManager. When you have loaded a driver, it is available for making a connection with a DBMS.

7. What is SQLException?

The SQLException class and its subtypes provide information about errors and warnings that occur while a data source is being accessed.

The base class for exceptions that occur while running JDBC applications is SQLException. Every method of the JDBC API is declared as being able to throw SQLExceptions. SQLException is an extension of java.lang.Exception and provides additional information related to failures that happen in a database context. Specifically, the following information is available from an SQLException:

- Text description
- SQLState
- Error code
- A reference to any other exceptions that also occurred

8. What is the difference between executequery () and executeupdate ()?

executeQuery() - is for operation select of Sql by PreparedStatement or Statement.

executeUpdata()- is for the operations such as insert, update or delete on SQL by PreparedStatement or Statement.

9. What is an XML namespace?

An XML namespace is a collection of names that can be used as element or attribute names in an XML document.

The namespace qualifies element names uniquely on the Web in order to avoid conflicts between elements with the same name.

10. What is Well Formed XML Document?

A "Well Formed" XML document has correct XML syntax.

The syntax rules are:

- XML documents must have a root element
- XML elements must have a closing tag
- XML tags are case sensitive
- XML elements must be properly nested
  XML attribute values must be quoted