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

Answer: 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 model and diagram?**

Answer:

model	diagram
1. Models represent systems at different levels of detail, which contains elements such as actors, use cases, classes, and packages.	1. Diagrams are used to build models of system in the systems in the same way as architects use drawings and diagrams to model buildings.
2. A model can evolve as we learn more about a task or problem.	2. it can generate new ideas and possibilities.

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

Answer: 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?**

Answer: In software development a prototype is a system or a partially complete system that is build 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. **Difference between IS and IT.**

Answer:

Information system(IS)	Information Technology(IT)
IS played an important part of human affairs. Used to capture, store, organize and display information.	IT Strategy is responsible for identifying the hardware component and configurations that will allow the software to operate effectively.
IS only be considered in the context of well thought-out business strategy.	IT only be considered in the context of specific information systems that are planned for development.
IS strategy is about what is feasible.	The role of IT strategy is to enable the successful defined in the information system strategy.

6. **Difference between feedback and feed forward.**

Answer:

Feedback	Feed forward
Feedback is sampling one or more outputs of a system for comparison to a control value.	Feed forward is sampling a system input, usually before it enters the system.

No one can develop a new skill, without receiving appropriate feedback.	Feed forward control information can help a system to be more responsive to environmental fluctuations.

7. **What is the UML notation for each of the following package, sub-system and model?**
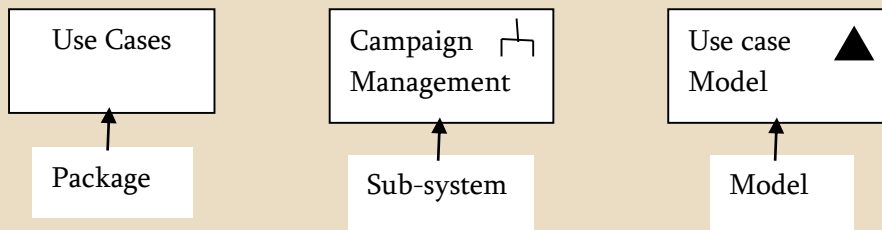   **Answer:**

Use Cases → Package

Campaign Management → Sub-system

Use case Model → Model

Fig: UML notation for packages, sub-systems and models.

8. **Draw a simple Activity diagram.**

Answer:

```
        ( )
         |
         v
   [ Plan Chapter ]
         |
         v
 [ Produce First Draft ]
         |
         v
   [ Revise Draft ] <---------+
         |                    |
         v                    |
        < >                   |
  (not Satisfied) ------------+
         |
         v
   [ Add Exercise ]
         |
         v
 [ Add Re-exercise
   To Bibliography ]
         |
         v
        ( )
```
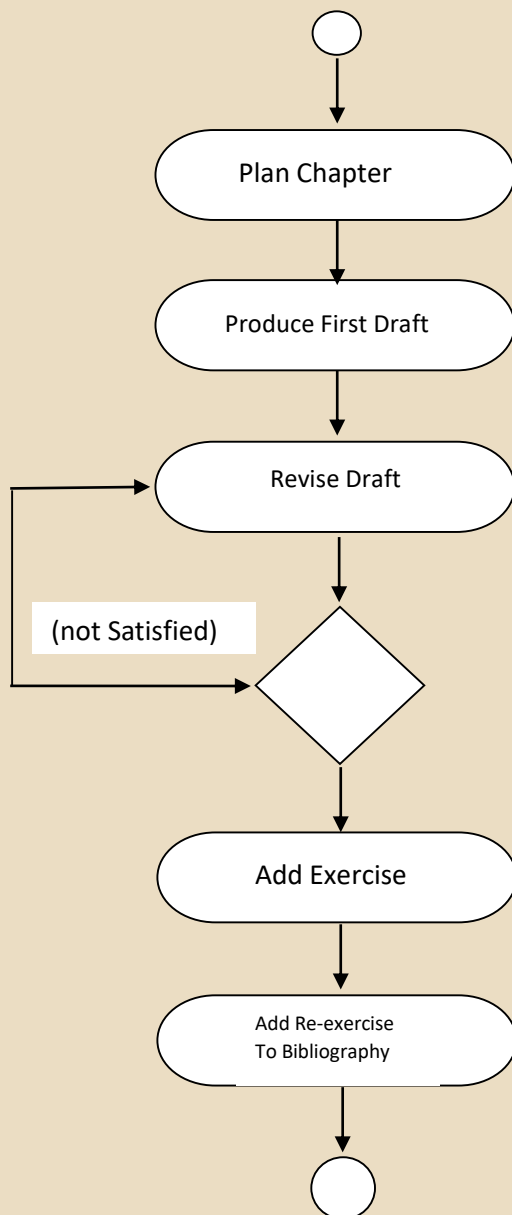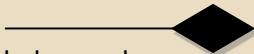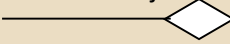
Fig: Activity diagram for the Activity write chapter.

9. **List the name of the fact finding techniques.**

Answer: There are 5 main fact finding techniques that are used by analyst to investigate requirements-

      a) Background reading
      b) Interviewing
      c) Observation
      d) Document Sampling
      e) Questionnaires

10. **Distinguish between composition from aggregation.**

Answer:

Composition	Aggregation
1. Composition is a type of abstraction that encapsulates groups of classes that collectively have the capacity to be a reusable sub-assembly. Represent the whole and the other part of the whole. 2. Symbol ◆ 3. A part can belong only one composition.	1. Aggregation represents a whole part association between two or more objects. 2. Symbol ◇ 3. A part can belong more than one aggregation.

11. **Difference between sequence diagram and collaboration diagram.**

Answer:

Sequence diagram	Collaboration diagram
1. Sequence diagram shows an interaction between objects arranged in a time sequence. 2. Sequence diagrams have a time dimension. 3. It does no show the link between object.	1. Collaboration diagram shows an interaction between object and the content of the interaction in terms of the links between the objects. 2. Don not have time dimension. 3. It shows the link between objects.

12. **What are the basic elements of UML model diagram?**

Answer: UML diagrams are made up of four elements-

      a) Icons
      b) Two dimensional symbols
      c) Paths
      d) Strings

13. **Phases of waterfall life cycle.**

    Answer: Phases of waterfall life cycle are given below:

- System engineering.
- Requirements analysis.
- Design.
- Construction.
- Testing.
- Installation.
- Maintenance.

14. **What is a collaboration diagram?**

    Answer: A collaboration diagram shows an interaction between objects and the context of the interaction in terms of the link between the objects.
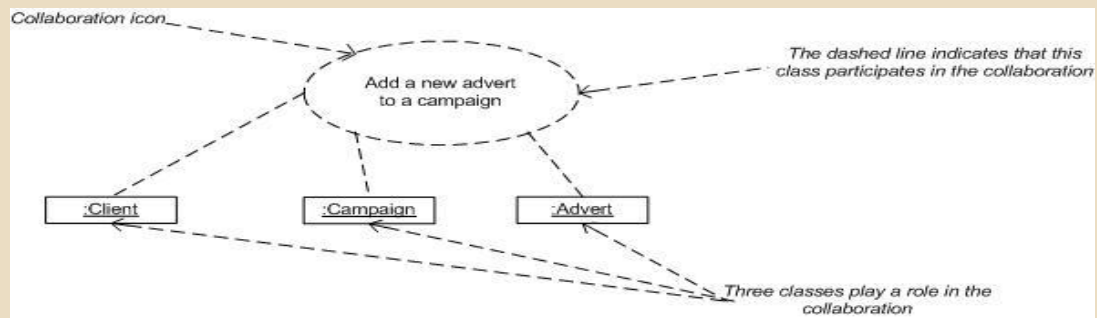
Fig: Collaboration for add a new advert to a campaign.

15. Difference between algorithmic and non-algorithmic technique to operation specification.
Answer:

Algorithmic technique	Non-Algorithmic technique

1. An algorithm defines the step-by-step behavior of an operation.
2. An algorithm also specifies the sequence in which the steps are performed.
3. Generally do not prefer in object-oriented development.
4. Describe the internal logic.
    eg. Activity Diagram.
	1. A non-algorithmic approach defines only inputs and results.
	2. If does not specifies the sequence.
	3. Generally preferred in object-oriented because Non-algorithmic methods of operation specification emphasize encapsulation.
	4. Do not describe.
	    eg. Decision table.