

# Information Systems Analysis & Design (M8748)

## Tutorial 21 Answer

1. In CPA how is the slack time for an activity calculated?

The slack time for an activity is the difference between the activity's EST (Earliest Start Time) and its LST (Latest Start Time). This represents the time by which a particular activity can be delayed without affecting the overall duration of the project.

2. In CPA how can you decide whether a milestone is on the critical path?

A milestone is on the critical path if its earliest start time and its latest start time are the same. That is if its slack time is 0.

3. What are the advantages of a Gantt chart when compared to a CPA chart?

The Gantt chart can be used to show the partial overlap of activities, it is a useful aid for resource smoothing and it can represent progress on the project activities.

4. What are the advantages of a CPA chart when compared to a Gantt Chart?

A CPA chart shows the interdependencies between activities and can be used to identify the slack times for activities and the critical path.

5. What are the main life cycle stages for DSDM?

The main life cycle stages for DSDM are:

- Feasibility study,
- Business study,
- Functional model iteration,
- Design and build iteration,
- Implementation.

6. What are the MoSCoW rules and how do they help in the management of a timeboxed activity?

The MoSCoW rules are:

- Must have requirements,
- Should have requirements,
- Could have requirements,
- Want to have but will not have this time around requirements.

These categorizations of requirements are used to prioritize requirements so that those with the highest priority are delivered within a particular timebox.

7. What are the underlying principles of XP?

The underlying principles of XP are communication, simplicity, feedback and courage.

8. What are the key elements of the XP approach?

The key elements of the XP approach are:

- The planning game involves quickly defining the scope of the next release from user priorities and technical estimates. The plan is updated regularly as the iteration progresses.
- The information system should be delivered in small releases that incrementally build up functionality through rapid iteration.
- A unifying metaphor or high level shared story focuses the development.
- The system should be based on as simple design.
- Programmers prepare unit tests in advance of software construction and customers define acceptance tests.
- The programme code should be restructured to remove duplication, simplify the code and improve flexibility—this is known as refactoring.
- Pair programming means that code is written by two programmers using one workstation.
- The code is owned collectively and anyone can change any code.
- The system is integrated and built frequently each day. This gives the opportunity for regular testing and feedback.
- Normally staff should work no more than forty hours a week.
- A user should be a full-time member of the team.
- All programmers should write code according to agreed standards that emphasize good communication through the code.

9. How do object wrappers help integrate new object-oriented systems with existing non-object-oriented systems?

Object wrappers provide existing non-object-oriented systems with an object-oriented style of interface hence making integration easier.

10. What factors should be considered when migrating to object technology?

The following approach should be applied when migrating to object technology.

- Identify a suitable pilot project.
- Train the relevant staff.
- Monitor the project carefully when it is under way.
- Review the project implementation.
- Identify the lessons learned and migrate this experience to other suitable projects.

The migration to OT will involve a review of all software development practices and procedures. A timely training plan should be put in place so staff have the opportunity to apply skills on projects as soon as they have been learnt.