Question One [40 Marks]

Question Two [11 Marks]

A pattern is often used to describe an encountered problem and the subsequent solution within some stage of a software project. Using the given template, complete the pattern for the following scenario:

> The software team created a set of user stories to document the required functionality of a software system. However, many functional aspects were missing or inaccurate. The client pointed out the omissions and errors during a review session. Thereafter, the team decided to teach the client to craft user stories and gradually let the client rewrite the incorrect ones and add new user stories.

Pattern Name: User Story Creation	Type: Task
Intent:	
Context:	
Problem:	
Solution:	
Resulting Context:	

Question Three [8 Marks]

Read the scenario below and answer the questions that follow:

A software development company builds financial information systems. For most of their projects requirements are fairly well defined upfront. The company motto is "*people leave, documents don't*" and consequently the teams have become accustomed to extensive documentation development after formal reviews of each completed activity. Coding and testing normally takes place towards the project end.

This company is considering entering a new market by developing a customized clinic management system for dentists. Core modules such as, the clinical charting and patient records will be released first. Other module requirements are still fuzzy at this stage for example, claims management, calendar and appointment scheduling. Financial management modules are planned for later.

3.1 Would you agree that waterfall process models are used to develop the financial information systems? Provide two points of motivation. (3)

3.2 Is an incremental process model appropriate for developing the clinic management system? Provide two reasons for your answer. (5)

Question Four [8 Marks]

A software team has been assigned an online registration system project. This is the first time the team will be developing a system for a university domain. They want to change from a Spiral model to Extreme Programming (XP) for this project.

4.1 Provide two brief discussion points on why the change to XP is suitable given the project and team characteristics. (4)

4.2 List two challenges that the team might experience when changing from Spiral to XP? (4)

Question Five [9 Marks]

5.1 A software team is operating as a closed paradigm structure.

5.1.1 What type of project is best suited for this structure? (2)

5.1.2 In order to re-structure for agile, the team realizes that it has to become *self-organizing*. Briefly describe two characteristics that make a team self-organizing. (4)

5.2 Increased geographical distance between software team members has challenges in three dimensions namely, communication, collaboration and coordination. State one measure that can be put in place to lessen the effects of each challenge. (3)

Question Six [7 Marks]

6.1 Requirements engineering consists of seven major tasks. Draw a flow diagram showing the sequence, iteration and feedback loops of the seven tasks. (4)

6.2 A software team has completed the requirements modelling activity and now want to validate each requirement. Write out a three point checklist of questions for the team to use for this purpose. (3)

Question Seven [8 Marks]

When designing modules for an on-line airline reservation system for booking flight tickets, the project leader advised the software team that "functional independence is a key to good design". She has suggested a flight details module, a check availability module, and a book ticket module.

7.1 Explain why the suggested modules are functionally independent. (2)

7.2 Differentiate between cohesion and coupling as two qualitative criteria for functional independence. (2)

7.3 Suggest suitable descriptions for a *check ticket availability* module that indicate low coupling and strong cohesion. Write a separate description to indicate low coupling and a separate description to indicate strong cohesion. (4)

Question Eight [9 Marks]

8.1 What is the difference between content architecture and webapp architecture? (4)

8.2 List three characteristics of effective design patterns. (3)

8.3 List the primary design objectives of a webapp interface. (2)

Total Mark = 100

Marking memo is not available. Please submit responses to your lecturer for commentary.