

B3.3-R4: SOFTWARE ENGINEERING & CASE TOOLS

NOTE:

1. Answer question 1 and any FOUR from questions 2 to 7.
2. Parts of the same question should be answered together and in the same sequence.

Time: 3 Hours

Total Marks: 100

1.
 - a) Discuss the clean room approach of Software Engineering.
 - b) Explain the concept of CASE workbenches with example.
 - c) "The cost of software maintenance usually exceeds the cost of software development." Do you agree with the statement? Justify your answer.
 - d) What is the layered technology in software engineering?
 - e) Discuss the difference between Data flow model and control flow model with an example.
 - f) Using example, explain why real-time systems usually have to be implemented using concurrent processes.
 - g) Compare Iterative Enhancement model with Evolutionary Development model.

(7x4)

2.
 - a) Discuss the difference between verification and validation and explain why validation is a particularly difficult.
 - b) Explain how formal system specification techniques in software process help in analysis of the system requirements at an early stage. Further, discuss various formal specification methods in detail.

(6+12)

3.
 - a) What is the difference between a Software Configuration Management audit and a formal technical review? Can their function be folded into one review? What are the pros and cons?
 - b) Explain the concept of component based software engineering.

(12+6)

4.
 - a) Discuss the process and stages involved in testing software in detail.
 - b) What do you mean by software documentation? Discuss various types of software documentations with example.

(12+6)

5.
 - a) What do you understand by software reliability?
 - b) Discuss the advantages of graphical information display and suggest four applications where it would be more appropriate to use graphical rather than digital displays of numeric information.
 - c) Draw a use case diagram for a bank ATM transaction.

(4+10+4)

6.
 - a) Explain the concept of domain analysis. List and explain various activities involved in domain analysis process.
 - b) How are coupling and cohesion related to modular design?

(12+6)

7. Write short notes on any **three** of the following:
 - a) Six Sigma
 - b) Reverse engineering
 - c) Data Dictionary
 - d) Prototyping model

(3x6)