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) List the various phases of Software Development Life Cycle and the various planning tools required in each phase.

b) Discuss the incremental delivery approach of Software Development. Under what circumstances such a approach should be adopted?

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) Describe the concept of concurrent 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? Further explain the measure of reliability in detail.

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.

(8+10)

6.

a) Explain the concept of domain analysis. List and explain various activities involved in domain analysis process.

b) Explain the concept of encapsulation, inheritance, and polymorphism with example.

(12+6)

7. Write short notes on following:

a) CMM Levels

b) Software CASE Tools

c) COCOMO II

(6+6+6)