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) Explain the different phases of Software Life Cycle involved in a waterfall model.
b) Define Data objects, attributes & relationship.
c) What are Functional and Non-functional requirements?
d) What is Change management?
e) Explain why program inspections are an effective technique for discovering errors in a program. What types of errors are unlikely to be discovered through inspections?
f) What is feasibility study? What are the contents in the feasibility study report?
g) Explain the steps involved in the prototyping.

(7x4)

2.

a) Explain the difference between Black Box and White Box testing techniques with an example.
b) What are the benefits of CASE tools?

(9+9)

3.

a) What are the purposes of Data Flow diagrams, Entity-Relationship diagrams? Give a diagram based example of each.
b) Explain in detail any four architectural styles.

(10+8)

4.

a) What is a class and object? Give the diagrams and representation of class and object with example.
b) Explain the following Software Metrics with their advantages and disadvantages.
   i) Lines of Code
   ii) Function Count

(9+9)

5.

a) List the top 10 software project risks and briefly outline the strategies for reducing each of the risk.
b) What is Data Dictionary? Explain each component of Data Dictionary.

(10+8)

6.

a) Explain Equivalence Class Partitioning and Boundary Value Analysis. Compare the two.
b) Explain the concept of Agile development. How is this different from other methods of software development?

(9+9)

7. Write Short Notes on the following:

a) Version Control
b) Reverse Engineering
c) CMM
d) GANTT Chart

(4.5x4)