

(3 Hours)

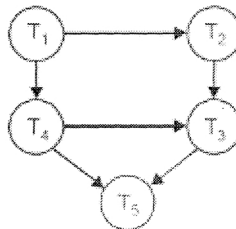
[Total Marks: 100]

**Note: (1) All questions are compulsory.****(2) Figures to the right indicate full marks.****(3) Illustrations, in-depth answers and diagrams will be appreciated.****(4) Mixing of sub-questions is not allowed.****Q1. Write short note on (any FOUR):****(20)**

- (A) Lock Scheduler
- (B) Query Optimization
- (C) While loop
- (D) CASE
- (E) Functional Testing
- (F) Website Testing

**Q2. Attempt the following (any FOUR):****(20)**

- (A) Explain the concept of Write Ahead Log Protocol.
- (B) State the anomalies of concurrent transactions and explain any one of it.
- (C) In the following precedence graph, is the corresponding schedule conflict serializable? Explain your answer.



- (D) Compute the closure of the following set F of functional dependencies for relation schema  $R = \{A, B, C, D, E\}$ .

$A \rightarrow BC$   
 $CD \rightarrow E$   
 $B \rightarrow D$   
 $E \rightarrow A$

List the candidate keys for R.

- (E) State the properties of Decomposition and explain any one of it.
- (F) State and explain the principles behind ARIES recovery algorithm.

**Turn Over**

**Q3. Attempt the following (any FOUR):** (20)

- (A) Write a PL/SQL block to display the numbers from 1 to 10 using for loop.
- (B) Using explicit cursor, write a PL/SQL block to display the name of the employees.
- (C) Explain the concept of nested table.
- (D) Illustrate the concept of COMMIT and ROLLBACK with the help of an example.
- (E) Write a note on system catalog.
- (F) Explain EXIT and EXIT WHEN statement with example.

**Q4. Attempt the following (any FOUR):** (20)

- (A) Explain the various knowledge area of project management.
- (B) Explain the components of function points used in estimation process.
- (C) What is risk? How it can be identified? Explain its classes.
- (D) Explain the different practices of Agile Development.
- (E) Define Extreme Programming and explain its core values.
- (F) A project has the following times schedule

Activity	1-2	1-3	2-4	3-4	3-5	4-9	5-6	5-7	6-8	7-8	8-9	8-10	9-10
Time in weeks	4	1	1	1	6	5	4	8	1	2	1	8	7

Construct network diagram and identify the critical path.

**Q5. Attempt the following (any FOUR):** (20)

- (A) Explain the principles of software testing.
- (B) State the different levels of testing and explain unit testing.
- (C) Explain defect tracking and logging with its life cycle.
- (D) Differentiate between Black-box and White-box testing.
- (E) State the major objective of unit testing. List the inputs and output of it.
- (F) Draw the graph matrix and calculate the cyclomatic complexity of the given control flow graph

