

Seat No.	
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SE - 212

Total No. of Pages : 3

**B.E. (Computer Sci. & Engg.) (Semester - VII) (Revised)**  
**Examination, November - 2018**  
**ADVANCED DATABASE SYSTEM**  
**Sub. Code : 67543**

Day and Date : Tuesday, 27 - 11 - 2018

Total Marks : 100

Time : 02.30 p.m. to 05.30 p.m.

- Instructions :
- 1) Q.4 & Q.8 are compulsory.
  - 2) Attempt any two questions from Q1,Q2,Q3.
  - 3) Attempt any two questions from Q5,Q6,Q7.
  - 4) Figures to the right indicate full marks.

**SECTION - I**

- Q1) a) What is lock de-escalation, and under what conditions is it required? Why is it not required if the unit of data shipping is an item? [8]
- b) Consider a failure that occurs during 2PC for a transaction. For each possible failure like site failure, disk failure or communication link failure, explain how 2PC ensures transaction atomicity despite the failure. [8]
- Q2) a) A car-rental company maintains a vehicle database for all vehicles in its current fleet. For all vehicles, it includes the vehicle identification number, license number, manufacturer, model, date of purchase, and color. Special data are included for certain types of vehicles:
- Trucks: cargo capacity
  - Sports cars: horsepower, renter age requirement
  - Vans: number of passengers
  - Off-road vehicles: ground clearance, drivetrain (four- or two-wheel drive)
- Construct an SQL: 1999 schema definition for this database. Use inheritance where appropriate. [8]
- b) What is object? What are the properties of object? Explain with example object structure? [8]

**P.T.O**

**Q3) a)** What is cursor? Write a cursor which update the salaries of an employee as follows: [8]

- i) if sal < 1000 then update the salary to 1500.
- ii) if sal ≥ 1000 and < 2000 then update the salary to 2500.
- iii) if sal ≥ 2000 and ≤ 3000 then update the salary to 4000.

And also count the no. of records have been updated.

**b)** What do you mean by systems development life cycle? Briefly explain each phase in the SDLC. [8]

**Q4)** Write a short notes on (Any Three) [18]

- a) Range and Hash partitioning Techniques.
- b) Semi and Bloom join strategies.
- c) Embedded and Dynamic SQL.
- d) ORDBMs Vs OODBMs

## SECTION - II

**Q5) a)** Explain what is the need of granting and revoking privileges. [4]

**b)** Give an example of how covert channels can be used to defeat the Bell-LaPadula model. [4]

**c)** Describe a scenario in which discretionary access controls are required to enforce a security policy that cannot be enforced using only mandatory controls. [8]

**Q6) a)** Give the DTD for an XML representation of the following nested-relational schema : [8]

Emp = (ename, ChildrenSet setof(Children), SkillsSet setof(Skills))

Children = (name, Birthday)

Birthday = (day, month, year)

Skills = (type, ExamsSet setof(Exams))

Exams = (year, city)

- b) What is Xquery? Explain with example FLWOR Expression? [8]

Q7) a) What is OLAP? Explain the different operations of olap with example? [8]

- b) Discuss the features of Star, Snowflake and Fact Constellation scheme of Data Warehouse, Compare the above three schemas. [8]

Q8) Write a short notes on (Any Three) : [18]

- a) Audit Trails in Database.
- b) Business intelligence Architecture.
- c) Xml Schema.
- d) Association Rule Mining.

