P P SAVANI UNIVERSITY

Third Semester of B. Tech. Examination
Nov-Dec 2021
SECE2011 Database Management System

10.12.2021, Friday   Time: 09:00 a.m. To 11:30 a.m.   Maximum Marks: 60

Instructions:
1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

SECTION – I

Q - 1	Answer the following (Any Five)	[05]
(i)	Write the difference in between Drop & Truncate command.	
(ii)	Define Aggregate Function.	
(iii)	Define Super Key.	
(iv)	Every candidate is primary key. TRUE/FALSE	
(v)	Give an example of "like" keyword.	
(vi)	Enlist DCL commands.	
(vii)	Define Degree of Entity.	
Q - 2 (a)	Enlist and explain Transaction Control commands with suitable example.	[05]
Q - 2 (b)	Explain the three level architecture of DBMS and its advantages.	[05]

OR

Q - 2 (a)	Why outer join is the extension of natural join? Enlist different outer joins and discuss any one outer join with an example.	[05]
Q - 2 (b)	Write short note on query processing with neat diagram.	[05]
Q - 3 (a)	Explain primary key, foreign key, unique, not null and check constraints with example.	[05]
Q - 3 (b)	Demonstrate the concepts of single row sub query and multiple raw sub query with example.	[05]

OR

Q - 3 (a)	Briefly explain projection, selection, set difference and division operator in relational algebra with proper example.	[05]
Q - 3 (b)	Write SQL query for the following using above relation.	[05]

Student(s_sn, s_name, s_address, s_major)
Course(c_code, c_title)
Registered(s_sn,c_code)
a) List the codes of courses in which at least one student is registered. – 1 mark
b) List the titles of registered courses. – 2 marks
c) List the codes of courses for which no student is registered. – 2 marks

Q - 4	Attempt any one.	[05]
(i)	Write short note on Materialization and Pipelining.	
(ii)	Differentiate between R-DBMS and traditional file system.	

SECTION – II

Q - 1	MCQ/Short Question/Fill in the Blanks (Any Five)	[05]
(i)	Define Prime Attribute.	
(ii)	In ER Diagram how multivalued attribute and Derived attribute can draw?	
(iii)	What kind of entity set is called Weak Entity Set?	

(iv)	Candidate keys for FD: A->B, B-.>A, C->E is _____.	
(v)	Define Discriminator.	
(vi)	In serializabilty test, if precedence graph is acyclic, the serializabilty order can be obtained by _____ of the Graph.	
	a) Topological Sort b) Heap Sort	
	c) Insertion Sort d) Bubble Sort	
(vii)	What is blind write in transaction?	
Q - 2 (a)	Construct E-R diagram for Library Management system. Use specialization and generalization in your diagram.	[05]
Q - 2 (b)	What are different Extended E-R features? Discuss any one with proper example.	[05]
	OR	
Q - 2 (a)	What is trigger? Explain its type with syntax.	[05]
Q - 2 (b)	Is relationship contain attributes in ER Diagram? Discuss reduction to E-R database schema with all cardinality and participation cases.	[05]
Q - 3 (a)	Explain Conflict serializability and view serializability.	[05]
Q - 3 (b)	Write a short note on Normalization. Explain 3NF & BCNF with example.	[05]
	OR	
Q - 3 (a)	Discuss disjoint and overlapping constraints with example.	[05]
Q - 3 (b)	Discuss the concept of Cursor and its type in PLSQL.	[05]
Q - 4	Attempt any one.	[05]
(i)	Explain two-phase locking protocol.	
(ii)	Find the 3NF decomposition of following FDs. A->B , A->C, D->E, D->F	

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