P P SAVANI UNIVERSITY

Third Semester of B. Tech. Examination
December 2018
SECE2011 Database Management System

24.12.2018, Monday **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 MCQ/Short Question/Fill in the Blanks (Any Five) **[05]**

(i) Every candidate key is primary key. TRUE/FALSE

(ii) Define data redundancy.

(iii) Define Primary Key.

(iv) Define cardinality of entity.

(v) Give an example of like keyword in SQL.

(vi) If there are T1 tuples in R1 and T2 tuples in R2 then number of tuples in R1× R2 is _____.

(vii) Enlist DML commands.

Q - 2 (a) Explain the difference between file system and database management system. **[05]**

Q - 2 (b) Explain natural join and different outer joins with example. **[05]**

OR

Q - 2 (a) Explain view level, logical level and physical level with neat diagram. **[05]**

Q - 2 (b) Write SQL query for the following using above relation. **[05]**

Student(rollno, name, class, birthdate)
Course(course_code, title, max_marks)
Registered(rollno, course_code, marks)

a) Find average marks obtained by each student. – 2 marks
b) Display details of students where course is DBMS. – 2 marks
c) Select the course where second and third characters are 'AT'. – 1 mark

Q - 3 (a) Explain primary key, foreign key, unique, not null and check constraints with example. **[05]**

Q - 3 (b) Consider following schema and write SQL for given statements. **[05]**

Student(rollno, name, class, birthdate)
Course(course_code, title, max_marks)
Registered(rollno, course_code, marks)
Write query to

(i) Display the marks of the student of DBMS course whose name is 'Ankit'. – 2 marks
(ii) Find average marks obtained by students in each course. – 2 marks
(iii) Remove all the students of CE class. – 1 mark

OR

Q - 3 (a) *Explain IN, All and Any keywords with proper example.* **[05]**

Q - 3 (b) *Explain projection, selection, union, intersection and rename operator with example.* **[05]**

Q - 4 *Attempt any one.* **[05]**

(i) *Explain steps of query processing with neat diagram.*

(ii) *Explain pipelining in detail.*

SECTION – II

Q - 1	MCQ/Short Question/Fill in the Blanks (Any Five)	[05]
(i)	Define Weak Entity Set.	
(ii)	Draw the notation of multivalued attribute and Derived attribute.	
(iii)	Define Prime Attribute.	
(iv)	Candidate key for FD: A->B, B->A, C->D is _____.	
(v)	Define Discriminator.	
(vi)	In serializabilty test, if precedence graph is acyclic, the serializabilty order can be obtained by _____ of the Graph a) Bubble Sort b) Heap Sort c) Insertion Sort d) Topological Sort	
(vii)	What is blind write?	
Q - 2 (a)	Enlist Extended E-R features. Discuss any two.	[05]
Q - 2 (b)	Construct E-R diagram for Banking system. Use specialization and generalization in your diagram.	[05]
	OR	
Q - 2 (a)	Explain disjoint and overlapping constraints with example.	[05]
Q - 2 (b)	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)	Explain two-phase locking protocol.	[05]
Q - 3 (b)	Find the 3NF decomposition of following FDs. A->B , A->C, D->E, D->F	[05]
Q - 4	Attempt any one.	[05]
(i)	*What is trigger? Explain its type with syntax.*	
(ii)	*Write Short note on Cursor and its type.*	

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