Sardar Patel Institute of Technology

Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai-400058, India

(Autonomous College Affiliated to University of Mumbai)

Mid Semester Examination
October 2023

Course Name: Database Management System   Course Code: CS204
Class: S.Y.BTech   Max. Marks: 30
Branch: COMP/DS/AIML   Semester: III

Instruction:
(1) All questions are compulsory
(2) Draw neat diagrams
(3) Assume suitable data if necessary
(4) Mention the question number clearly while writing the answer

QNo	Question	Marks	CO
1a)	List and justify the four significant differences between a file-processing system and a DBMS OR List all codd's rule and explain the Physical Data Independence and Logical Data Independence rule.	5	1
b)	State the different roles and responsibilities handled by the database administrator.	2	1
c)	Analyse the situation where DBA has given all the permission to user A, user A has given all the permission to user B and user B has given all the permission to user C. What will happen to user C if user A removes all the permission given to B, justify the situation for users A, B and C using suitable commands.	3	1
2a)	Find the minimum number of tables required to represent the given ER diagram in the relational model and write attributes in each table.(a1,b1,c1,and d1 are primary keys)	5	1

b)	Let R1(a,b,c) and R2(x,y,z) be the two relations in which 'a' is s foreign key in R1 that references the primary key of R2. Consider four options and from that which is correct regarding referential integrity. Justify your answer for each option.
	
	   a) insert into R1 b)insert into R1
	   c) delete from R1 d) delete from R2
		5	1

3a)	Write the following query in SQL		2

Consider the following relation Employee (Note: Eid -Primary key)

Eid	Dept	Name	Salary
789	Account	Gopi	8000
234	HR	Aarushi	7000
345	Research	Ram	8900
567	HR	Aman	8800
678	Research	Nishad	4800

a)   Write a query to display the following output   01

Eid	Name	Salary
789	Gopi	8000
345	Ram	8900

   b) Consider the following relation.
       Student (SID, NAME, AGE, CITY)

i)Write a query to modify existing Student table to record information of 'class' of students. Make sure that column class should content only students belong to COMP and AIML class only.   01

ii) Write a query to modify SID= 103 of students who belongs to city delhi.   01

iii) Write a query to clear all information of student table.   01

c) Consider the relation schema Empolyee (eid int primary key, name char unique, age int default 20) if the tuple

| 101 | Vivek | 10 |

Is present in the instance of Employee which of the following tuples can NOT be inserted to employee table.

a)

| 101 | Namita | 34 |

b)

| 103 | Vivek | NULL |

c)

| 102 | Ramesh | 23 |

01

3b) Write following query in relational Algebra.

Consider the following relation.

Employee

E_id	Dept_id
123	D1
124	D1
123	D2
125	D2

Department

Dept_id	DName
D1	HR
D2	ACCOUNT

a) Write a query to find E_id of all employees who belong to all departments. **01**

b) Write a query to find E_id of employee belongs to D2 department. **01**

c) Consider the following schema.
Student (sid, name, address)
Course (cid, cname, duration)
Enroll (sid, cid, cost)

i) Find the name of students who enrolled for course having duration more than 10hrs. **01**

ii)Find name of students belongs to city "Mumbai" **01**

iii) Find details of all students. **01**

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