

K. J. Somaiya College of Engineering, Mumbai-77
(Autonomous College Affiliated to University of Mumbai)

End Semester Exam
MAY-JUNE 2021

Max. Marks: 50

Duration: 1 Hr. 45 Min. (For attempting questions) + 15 min. (uploading)

Class: S. Y. B. Tech.

Name of the Course: Relational Database Management Systems.

Course Code: UCEC403.

Semester: IV

Branch: COMP

Instructions:

- (1) All questions are compulsory.
- (2) Draw neat diagrams as applicable.
- (3) Assume suitable data if necessary.

Question No.		Max. Marks																		
Q.1 A	<p>Consider the two relations below. The primary keys are underlined. Identify all possible foreign key(s) from the options based only on the two relations.</p> <p>employee (employee_id, employee_name, department_id) department (department_id, department_name)</p> <p>a) employee_id b) department_id c) employee_id, department_id d) employee_id, department_id, employee_name</p>	01 Mark																		
Q.1 B	<p>Identify the correct statement(s).</p> <p>a) employee (id# , empname) is a relation instance b) { 12, Jessica } is an instance of a relation schema c) { 12, Jessica } specifies a relation schema d) { 12, Jessica } is neither a relation schema nor an instance of a relation</p>	01 Mark																		
Q.1 C	<p>Given below is the table department_manager_employee</p> <table border="1"><thead><tr><th colspan="3">department_manager_employee</th></tr><tr><th>employee_id</th><th>department</th><th>manager</th></tr></thead><tbody><tr><td>1101</td><td>Finance</td><td>Sam</td></tr><tr><td>1102</td><td>R&D</td><td>Rohit</td></tr><tr><td>1101</td><td>HR</td><td>Sam</td></tr><tr><td>1103</td><td>Retail</td><td>Rohit</td></tr></tbody></table> <p>Find out the functional dependencies that do not hold on the above table:</p> <p>a) employee_id → manager b) employee_id → department c) manager → department d) department → manager</p>	department_manager_employee			employee_id	department	manager	1101	Finance	Sam	1102	R&D	Rohit	1101	HR	Sam	1103	Retail	Rohit	01 Mark
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Q.1 D	<p>Consider the emp_project table.</p> <table><tr><th colspan="4">emp_project</th></tr><tr><th>pname</th><th><u>pnumber</u></th><th>plocation</th><th>dnum</th></tr><tr><td>ProductA</td><td>1</td><td>New York</td><td>5</td></tr><tr><td>ProductB</td><td>2</td><td>Tempe</td><td>5</td></tr><tr><td>ProductC</td><td>3</td><td>Wilmington</td><td>5</td></tr><tr><td>ERP</td><td>10</td><td>Delaware</td><td>4</td></tr><tr><td>Reorg</td><td>20</td><td>Wilmington</td><td>1</td></tr><tr><td>Newbee</td><td>30</td><td>Delaware</td><td>4</td></tr></table> <p>Identify the correct query for the following output.</p> <table><tr><th>emp_project</th></tr><tr><td>pname</td></tr><tr><td>ERP</td></tr><tr><td>Newbee</td></tr></table> <p>a) SELECT pname FROM TABLE emp_project WHERE dnum = 4; b) SELECT pname FROM emp_project FOR dnum = 4; c) SELECT pname FROM TABLE emp_project FOR dnum = 4; d) SELECT pname FROM emp_project WHERE dnum = 4;</p>	emp_project				pname	<u>pnumber</u>	plocation	dnum	ProductA	1	New York	5	ProductB	2	Tempe	5	ProductC	3	Wilmington	5	ERP	10	Delaware	4	Reorg	20	Wilmington	1	Newbee	30	Delaware	4	emp_project	pname	ERP	Newbee	02 Mark
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Q.1 E	<p>Consider the customer table. customer (customer_id , dept_name , credits) . Create a new customer 'Stacey', with 10 credits for department 'Loan' Identify the appropriate SQL.</p> <p>a) INSERT INTO TABLE customer VALUES ((Stacey' , 'Loan' , 10) b) INSERT INTO customer ((Stacey', 'Loan', 10) c) INSERT INTO customer VALUES ('Stacey', 'Loan', 10) d) INSERT INTO TABLE customer ((Stacey',(Loan', 10)</p>	01 Mark																																				
Q.1 F	<p>Consider the following grant statement GRANT CREATE INDEX TO Sahana WITH ADMIN OPTION;</p> <p>Identify the correct statement.</p> <p>a) Sahana can only create new indexes but not grant this privilege to any user b) Sahana can not only create index but also create tables, update and select them c) Sahana can grant create index privilege to other users d) WITH ADMIN is used to provide object level privileges</p>	02 Marks																																				

Q.1 G	<p>Consider the table below</p> <table><tr><th colspan="9">employee</th></tr><tr><th>fname</th><th>lname</th><th>ssl</th><th>bdate</th><th>address</th><th>sex</th><th>salary</th><th>s_ssl</th><th>dno</th></tr><tr><td>Rita</td><td>Chatterjee</td><td>123</td><td>1965-01-09</td><td>731 Fondren</td><td>F</td><td>30000</td><td>333</td><td>5</td></tr><tr><td>Rajeev</td><td>Sanyal</td><td>333</td><td>1955-12-08</td><td>638 Voss</td><td>M</td><td>40000</td><td>888</td><td>5</td></tr><tr><td>Sanjay</td><td>Agrawal</td><td>999</td><td>1978-01-19</td><td>3321 Castle</td><td>M</td><td>25000</td><td>987</td><td>4</td></tr><tr><td>Jennifer</td><td>Agacy</td><td>987</td><td>1980-12-08</td><td>291 Voss</td><td>F</td><td>45000</td><td>888</td><td>4</td></tr><tr><td>Narayan</td><td>Chaudhuri</td><td>666</td><td>1980-10-04</td><td>561 Castle</td><td>M</td><td>47000</td><td>333</td><td>5</td></tr><tr><td>Aishwarya</td><td>Kapoor</td><td>453</td><td>1972-09-08</td><td>291 Oak</td><td>F</td><td>25000</td><td>333</td><td>5</td></tr><tr><td>Mahesh</td><td>Srivastava</td><td>988</td><td>1982-11-07</td><td>567 Oak</td><td>M</td><td>35000</td><td>987</td><td>4</td></tr><tr><td>James</td><td>Stanley</td><td>888</td><td>1962-10-01</td><td>467 Oak</td><td>M</td><td>56000</td><td>1</td><td>1</td></tr></table> <p>The data types of the columns of the table employee are given below:</p> <ul style="list-style-type: none">• f sname, lname, Mate, address, sex: VARCHAR• ssl, salary, s_ssl, dno: INT <p>How many rows of employee table will be selected for the query given below?</p> <p>SELECT E.salary FROM employee AS E, employee AS S WHERE E.s_ssl = S.ssl;</p> <p>a) 4 b) 2 c) 7 d) 8</p>	employee									fname	lname	ssl	bdate	address	sex	salary	s_ssl	dno	Rita	Chatterjee	123	1965-01-09	731 Fondren	F	30000	333	5	Rajeev	Sanyal	333	1955-12-08	638 Voss	M	40000	888	5	Sanjay	Agrawal	999	1978-01-19	3321 Castle	M	25000	987	4	Jennifer	Agacy	987	1980-12-08	291 Voss	F	45000	888	4	Narayan	Chaudhuri	666	1980-10-04	561 Castle	M	47000	333	5	Aishwarya	Kapoor	453	1972-09-08	291 Oak	F	25000	333	5	Mahesh	Srivastava	988	1982-11-07	567 Oak	M	35000	987	4	James	Stanley	888	1962-10-01	467 Oak	M	56000	1	1	02 Mark
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Q.2	<p>Attempt any FIVE questions out of the following</p> <p>A. Explain the practical working of TRUNCATE command B. List various users of database management system C. What is the use of REVOKE? Give example. D. List and draw any four symbols used in ER Model. E. Disadvantages of Trigger. F. Explain and Transitive dependency. G. State use of ‘%’ character in string operations.</p>	02 Marks each																																																																																										
Q.3	<p>A. Explain Deadlock handling-Wait for graph</p> <p style="text-align: center;">Or</p> <p>B. Explain Mapping EER Model to Relational Model</p>	10 Marks																																																																																										
Q.4 A	<p>Consider the following schedule</p> <table><tr><td>T1</td><td>T2</td><td>T3</td></tr><tr><td></td><td>R(X)</td><td></td></tr><tr><td></td><td></td><td>W(X)</td></tr><tr><td></td><td>W(Y)</td><td></td></tr><tr><td></td><td>W(X)</td><td></td></tr><tr><td>W(X)</td><td></td><td></td></tr></table> <p>Determine given schedule is conflict or view serializable. Provide step wise solution.</p>	T1	T2	T3		R(X)				W(X)		W(Y)			W(X)		W(X)			05 Marks																																																																								
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Q.4 B	<p>Explain Pitfalls in Relational-Database designs.</p>	05 + 05 Marks																																																																																										

Q.5 A	Compare 3NF and BCNF.	05 Marks
Q.5 B	Explain how authorization in SQL is achieved.	05 Marks