Online Training Exam Details

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<table>
<tr><th>S.no</th><th>Attempt Answer</th><th>Correct Answer</th></tr>
<tr><td>1</td><td>A</td><td>A</td></tr>
<tr><td colspan="3">A Table R has 6 attributes A, B, C, D, E, F and the functional dependencies are given below F= { AB->C, DC->AE, E->F } Tell the table is in which normal form?
a. 1NF
b. 2NF
c. 3NF
d. BCNF</td></tr>
<tr><td>2</td><td>A</td><td>C</td></tr>
<tr><td colspan="3">Consider the tables salesinformation given below:
Table: salesinformation
region salesman sale
North James 800000
West Alan 760000
West David 350000
East John 124000
North Nolan 590000
South Nick 235000
East Nicholas 145000
Katie and Lisa have written queries to get the desired output:
region salesman sale
West Alan 760000
East John 124000
East Nicholas 145000

Katie’s Query:
SELECT*FROM salesinformation WHERE (LOWER(region) LIKE ‘%t’ AND (UPPER(salesman) LIKE ‘%N’ OR UPPER(salesman) LIKE ‘N%’)) ;
Lisa’s Query:
SELECT* FROM salesinformation WHERE (LOWER(region) LIKE ‘%th’ OR (UPPER(salesman) LIKE ‘%N’ AND UPPER(salesman) LIKE ‘N%’)) ;
Whose query will generate the desired output?
A. Both Lisa’s and Katie’s
B. Neither Lisa’s nor Katie’s
C. Only Katie’s
D. Only Lisa’s</td></tr>
<tr><td>3</td><td>A</td><td>A</td></tr>
<tr><td colspan="3">What will be the output of the following function call in SQL?
SELECT REPLACE('ABC ABC ABC', 'a', 'c');
1. cBC cBC cBC
2. aBC aBC aBC
3. BC BC BC
4. aB aB aB</td></tr>
<tr><td>4</td><td>C</td><td>C</td></tr>
<tr><td colspan="3">Given are the columns in the STUDENTS table, Which of the following statements will you use to retrieve a string that contains ‘_abc_’ in the ‘STUDENT_ID’ column?
STUDENTS table columns:
CLASS_ID NUMBER (4)
LAST_NAME VARCHAR2 (25)
STUDENT_ID VARCHAR2 (10)
Options
1. SELECT class_id, last_name, student_id FROM students WHERE student_id = %ABC%;
2. SELECT class_id, last_name, student_id FROM students WHERE student_id LIKE ABC_%;
3. SELECT class_id, last_name, student_id FROM students WHERE student_id LIKE %ABC%;
4. None of these</td></tr>
<tr><td>5</td><td>A</td><td>A</td></tr>
<tr><td colspan="3">Which of the following statements are true about LIKE operator in SQL?
• LIKE operators are case insensitive.
• LIKE ‘%abc’ finds all the strings end with abc
• LIKE ‘%ABC%’ finds all the strings which contain abc
• LIKE ‘_AC_’ find all the strings which have exactly 4 characters and the 2nd and 3rd characters are A,C respectively
Options
1. A,B,C,D
2. A,B,C
3. A,B,C
4. A,B</td></tr>
<tr><td>6</td><td>C</td><td>C</td></tr>
<tr><td colspan="3">Which of the following lines in the given code contains an error?
1. SELECT stid,f_name, l_name
2. FROM students
3. WHERE SUBSTR(l_name, 1, 1) > TO_NUMBER(‘P’)
4. AND stid > 2000
5. ORDER BY stid DESC, l_name ASC;
Options
1. No error
2. A
3. C
4. D</td></tr>
<tr><td>7</td><td>A</td><td>A</td></tr>
<tr><td colspan="3">Consider the following SQL query:
SELECT * FROM orders WHERE order_date = MAX(order_date);
What error does this query produce?

A) Incorrect usage of aggregate function in the WHERE clause.
B) Missing GROUP BY clause for the non-aggregated columns.
C) MAX function cannot be used in the WHERE clause.
D) Missing parentheses around the MAX function.</td></tr>
<tr><td>8</td><td>C</td><td>C</td></tr>
<tr><td colspan="3">Find the correct choice of the given SQL command:
SELECT ROUND(123.456, (SELECT LENGTH(ROUND(123.456,-1)) FROM dual)) FROM dual;

A) 120
B) 123
C) 124
D) Error</td></tr>
<tr><td>9</td><td>D</td><td>A</td></tr>
<tr><td colspan="3">Which of the following SQL queries returns the names of students who are enrolled in all courses?

A) SELECT student_name FROM Student WHERE NOT EXISTS (SELECT * FROM Course WHERE NOT EXISTS (SELECT * FROM Enrollment WHERE Student.student_id = Enrollment.student_id AND Course.course_id = Enrollment.course_id)
B) SELECT student_name FROM Student WHERE student_id IN (SELECT student_id FROM Enrollment GROUP BY student_id HAVING COUNT(DISTINCT course_id) = (SELECT COUNT(*) FROM Course));
C) SELECT student_name FROM Student WHERE (SELECT COUNT(*) FROM Course) = (SELECT COUNT(*) FROM Enrollment WHERE Student.student_id = Enrollment.student_id);
D) SELECT student_name FROM Student WHERE student_id IN (SELECT student_id FROM Enrollment GROUP BY student_id HAVING COUNT(*) = (SELECT COUNT(*) FROM Course));</td></tr>
<tr><td>10</td><td>B</td><td>B</td></tr>
<tr><td colspan="3">Consider the following SQL query:
SELECT AVG(salary) FROM employees GROUP BY department HAVING AVG(salary) > 5000;
What does this query return?

A) Average salary for each department with a salary greater than $5000.
B) Average salary for each department but only if the average salary is greater than $5000.
C) It will throw an error because of the improper use of the HAVING clause.
D) It will return the average salary for all employees.</td></tr>
<tr><td>11</td><td>D</td><td>C</td></tr>
<tr><td colspan="3">Which of the following SQL queries returns the count of rows in the 'orders' table for each unique value of the 'customer_id' column?

A) SELECT COUNT(*), customer_id FROM orders GROUP BY customer_id;
B) SELECT customer_id, COUNT(*) FROM orders;
C) SELECT customer_id, COUNT(*) FROM orders GROUP BY customer_id;
D) SELECT COUNT(*), DISTINCT customer_id FROM orders;</td></tr>
<tr><td>12</td><td>A</td><td>C</td></tr>
<tr><td colspan="3">R is a relationship between the entities E1 and E2. The existence of E2 is completely dependent on the entity set E1. Which of the following constructs is used to represent the entity set E2?
1. Dotted rectangle.
2. Diamond
3. Doubly outlined rectangle
4. Rectangle</td></tr>
<tr><td>13</td><td>D</td><td>D</td></tr>
<tr><td colspan="3">Given {student_id} is a candidate key, {student_name, student_street} is another candidate key then
1. {student_id, student_name} is also a candidate key
2. {student_id, student_street} is also a candidate key
3. {student_id, student_name, student_street} is also a candidate key
4. None</td></tr>
<tr><td>14</td><td>A</td><td>A</td></tr>
<tr><td colspan="3">Let R= (A, B, C, D, E, F) be a relation scheme with the following dependencies: C->F, E->A, EC->D, A->B. Which of the following is not a key for R?
1. CD
2. CE
3. BCE
4. CEF</td></tr>
<tr><td>15</td><td>B</td><td>A</td></tr>
<tr><td colspan="3">Consider the relation R(A, B, C, D, E, F, G, H, I, J) and the set of functional dependencies F = {{A,B}âŸ¶{C}, {A}âŸ¶{D,E}, {B}âŸ¶{F}, {F}âŸ¶{G,H}, {D}âŸ¶{I,J}} What is the key for R?
1. AB
2. BC
3. CD
4. EF</td></tr>
</table>

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S.no	Attempt Answer	Correct Answer
1	A	D
Examine the description of the EMPLOYEES table: EMP_ID NUMBER (4) NOT NULL LAST_NAME VARCHAR2 (30) NOT NULL FIRST_NAME VARCHAR2 (30) DEPT_ID NUMBER (2) JOB_CAT VARCHAR (30) SALARY NUMBER (8, 2) Which statement shows the department ID, minimum salary, and maximum salary paid in that department, only if the minimum salary is less than 5000 and maximum salary is more than 15000? A.SELECT dept_id, MIN (salary), MAX (salary) FROM employees WHERE MIN(salary) < 5000 AND MAX (salary) > 15000; B.SELECT dept_id, MIN (salary), MAX (salary) FROM employees WHERE MIN (salary) < 5000 AND MAX (salary) 15000 GROUP BY dept_id; C.SELECT dept_id, MIN(salary), MAX(salary) FROM employees HAVING MIN (salary) < 5000 AND MAX (salary) D.SELECT dept_id, MIN (salary), MAX (salary) FROM employees GROUP BY dept_id HAVING MIN(salary) < 5000 AND MAX (salary) > 15000		
2	B	A
Evaluate these two SQL statements: SELECT last_name, salary, hire_date FROM EMPLOYEES ORDER BY salary DESC; SELECT last_name, salary, hire_date FROM EMPLOYEES ORDER BY 2 DESC; What is true about them? A. The two statements produce identical results. B. The second statement returns a syntax error. C. There is no need to specify DESC because the results are sorted in descending order by default. D. The two statements can be made to produce identical results by adding a column alias for the salary column in the second SQL statement.		
3	A	C
A table T_COUNT has 12 number values as 1, 2, 3, 32, 1, 1, null, 24, 12, null, 32, null. Predict the output of the below query. SELECT COUNT (num) FROM t_count; A. 12 B. 6 C. 9 D. Throws exception because COUNT function doesn't works with NULL values		
4	D	D
What is true about a schema? A. A schema is owned by a database user and has the same name as that user B. Each user owns a single schema C. Schema objects include database links D. All of the above		
5	B	C
Query to retrieve records where sal between 1000 to 2000 a) Select * from emp where sal>=1000 and 2000 b) Select * from emp where sal between (1000, 2000) c) Select * from emp where sal>=1000 and sal<2000 d) Select * from emp where sal in 1000 and 2000		
6	D	D
Consider the statements: S1: The key of an entity type always consists of a single attribute. S2: The key of an entity type may have more than one attribute. S3: An entity type has exactly one key. S4: An entity type may have more than one key. Which of the following is correct? a. S1 and S3 are TRUE b. S1 and S4 are TRUE c. S2 and S3 are TRUE d. S2 and S4 are TRUE		
7	D	D
The PRODUCTS table has these columns: PRODUCT_ID NUMBER(4) PRODUCT_NAME VARCHAR2(45) PRICE NUMBER(8,2) Evaluate this SQL statement: SELECT * FROM PRODUCTS ORDER BY price, product_name; What is true about the SQL statement? A. The results are not sorted. B. The results are sorted numerically. C. The results are sorted alphabetically. D. The results are sorted numerically and then alphabetically.		
8	C	C
How can an empty table emp1 created with same structure as table emp? a) Create table emp1 as select * from emp b) Create table emp1 like (select * from emp) c) Create table emp1 as select * from emp where 1=2 d) Create table emp1 like (select * from emp where 1=2)		
9	C	C
Which query selects first n records from a table? a) select * from emp where rownum = &n; b) select * from emp where rownum >= &n; c) select * from emp where rownum <= &n; d) select * from emp where rownum <> &n;		
10	D	D
Where can sub queries be used? A. field names in the SELECT statement B. the FROM clause in the SELECT statement C. the HAVING clause in the SELECT statement D. All of the above		

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S.no	Attempt Answer	Correct Answer
1	B	C

Consider the given patient and department table,

TABLE PATIENT				
P_ID	P_NAME	P_CITY	TEST_DATE	DEPARTMENT
PT001	AAA	Kanpur	1-Jun-16	Cardiac
PT002	AAB	Kanpur	2-Jun-16	Physiotherapy
PT003	AAC	Kanpur	1-Jun-16	ENT
PT004	AAD	Kanpur	2-Jun-16	Diagnostics
PT005	AAE	Kanpur	3-Jun-16	Neuro Sciences
PT006	BAA	Lucknow	1-Jun-16	Orthopedic
PT007	BAB	Lucknow	2-Jun-16	General Surgery
PT008	BAC	Lucknow	1-Jun-16	ENT
PT009	BAD	Lucknow	2-Jun-16	General Surgery
PT010	BAE	Lucknow	3-Jun-16	Neuro Sciences
PT011	CAA	New Delhi	1-Jun-16	Pulmonary
PT012	CAB	New Delhi	2-Jun-16	General Surgery

TABLE DEPARTMENT	
D_NAME	D_LOCATION
Anesthesia	Floor 1
Cardiac	Floor 2
Diagnostics	Floor 3
ENT	Floor 4
General Surgery	Floor 5
Neuro Sciences	Floor 6
Physiotherapy	Floor 7
Psychiatry	Floor 8
Orthopedic	Floor 9
Pulmonary	Floor 10

Query:
SELECT SUBSTR (P_ID, 3) PATIENTID, d.D_NAME FROM PATIENT p INNER JOIN DEPARTMENT d ON p.DEPARTMENT = d.D_NAME WHERE P_CHECKUP_DATE= '02-Jun-2016' AND LENGTH (D_NAME) < 15 order by PATIENTID desc;

Which department will be present at second position from top on execution of the above query?

a) Diagnostics
b) General Surgery
c) Physiotherapy
d) Pulmonary

2	C	D

Consider the given SQL Query
Select * From Table_A a Right Outer Join Table_B b on a.c1=b.c1 where a.c1 is NULL

Statement 1: All the rows in the Table_A satisfying the condition of equality.
Statement 2: All the rows in the Table_B satisfying the condition of equality.
Which option is correct
a) Statement 1 is true
b) Statement 2 is true
c) Both the Statements are correct
d) None of the above

3	D	A

The following statements are executed on an empty MongoDB Collection

db.product.insert ([{_id:1001, Productname:"CCTV Camera", Type:"Exterior", Price: 4500},
{_id:1002, Productname:"Washing Machine", Type:"Interior", Price: 4000},
{_id:1003, Productname:"Car", Type:"Exterior", Price: 4000},
{_id:1004, Productname:"Blender", Type:"Interior", Price: 2500},
{_id:1005, Productname:"Microwave", Type:"Interior", Price: 2500},
{_id:1006, Productname:"Gardening Machine", Type:"Exterior", Price: 3500}]);

db.product.update ({$or: [{Productname:" Washing Machine'}, {Price: 4000}]}, {$set: {Price: 3500}});

db.product.update ({_id: 1003}, {$set: {Price: 2500}});

db.product.update ({_id: 1006}, {Type:"Interior"});

db.product.remove ({Price: {$gt: 4000}});

Find the set of statements which will be correct after executing the above statements,
S1: Three products will have price as 2500
S2: Two products will have price as 3500
S3: The collection will have four "Interior" types of product
S4: Two products will have a name ending with "Machine"

a. S1 and S3
b. S1 and S4
c. S2 and S3
d. S2 and S4

4	C	C

Consider the given relation scheme and the set of functional dependencies
R = (C1, C2, C3, C4, C5, C6, C7, C8, C9, C10)
F = {{C1,C2} → {C3}, {C2} → {C5,C6}, {C1,C4} → {C7,C8}, {C7} → {C9}, {C8} → {C10}} on R. What is the key for R?

a) {C1}
b) {C1, C2}
c) {C1, C2, C4}
d) {C1, C2, C4, C7, C8}

5	C	A

Consider the table student given as,

TABLE STUDENT				
Sid	Sname	Subject	College	Marks
1001	Abhinav	DAA	C1	70
1002	Sameer	Compiler	C2	75
1001	Abhinav	DBMS	C1	60
1003	Mahek	Web Technology	C3	50
1002	Sameer	DBMS	C1	40
1003	Mahek	Machine Learning	C2	50

How many rows will be printed in output after executing the query?

Query:
SELECT Sid, name FROM Student WHERE marks > 40 GROUP BY Sid, Sname HAVING COUNT (DISTINCT College) > 1;

a. 1
b. 2
c. 3
d. 4

6	B	D

Which query will return three highest salaries from the Employee table?

Query 1: Select Distinct salary from Employee a where 3 >= (Select Count(Distinct salary) from Employee b where a.salary <= b.salary) order by a.salary desc;

Query 2: Select Distinct salary from Employee a where 3 >= (Select Distinct salary from Employee b where a.salary <= b.salary) order by a.salary;

Query 3: Select Min(salary) from (Select Distinct salary from Employee order by salary desc) where rownum<=3;

a) Q1 only
b) Q1 and Q2
c) Q2 and Q3
d) Q1 and Q3

7	B	B

Consider the table's faculty and allocation given below:

FACULTY		
fid	fname	experience
101	Ankush	11
102	Anurag	12
103	Arushi	10
104	Aryan	7
105	Ashutosh	6

ALLOCATION			
courseid	fid	status	completiondate
1001	101	Running	31-Mar-22
1002	102	Completed	31-Dec-21
1003	101	Running	31-Mar-22
1004	102	Completed	31-Dec-21
1005	104	Running	31-Mar-22

Query:

SELECT fid FROM allocation WHERE status='Running' AND fid IN (SELECT fid FROM faculty WHERE experience >=10);

How many rows will be fetched when the above query gets executed?

a. 1
b. 2
c. 3
d. 4

8	D	B

Consider a student table with attributes studentid, studentname, dob and contact where studentid is primary key and is the only unique column in the table.
There are three indexes for the student table as:
Index_1 - studentid
Index_2 - studentname, dob
Index_3 - dob, phone

Which of the following condition will result in INDEX UNIQUE SCAN?

C1 - Where a studentname is starting with specific letter
Like studentname LIKE 'A%'
C2 - Where the specific studentname is selected and with specific date of birth
Like studentname = 'Abhay' AND dob = '01-Jan-2001'
C3 - Where a city is selected and with specific date of birth
Like city = 'Kanpur' AND dob > '01-Jan-2001'
C4 - Where a specific studentid is selected and with specific date of birth
Like studentid = 'PT001' AND dob = '01-Jan-2001'

a. C1
b. C2
c. C3
d. C4

9	A	D

Consider the given SQL Statement
Select distinct O1.name from Office O1, Office O2 where O1.income > O2.income and O2.city = 'New York'
Which statement is best suited for the given query statement?
a) Find the name of all the offices that have income greater than all offices in New York
b) Find the name of all the office that has greatest income in New York
c) Find the name of all the offices that have income greater than some office located in New York
d) Find the name of any office that has income greater than any branch in New York

10	D	A

Consider the given table Employees1

Empno	Ename	Title	Mgr
1	n1	t1	3
2	n2	t2	3
3	n3	t3	6
4	n4	t4	3
5	n5	t5	6
6	n6	t6	3

Expected Output

employee	manager
n1	n3
n2	n3
n3	n6
n4	n3
n5	n6
n6	n3

Which query will give the required expected output?
a)
Select emp.ename as employee, manager. name as manager
from Employees1 as emp inner join Employees1 as manager
on emp.Mgr = manager.Empno
b)
Select emp.ename as employee, manager.ename as manager
from Employees1 as emp inner join Employees2 as manager
on emp.Mgr = manager.Empno
c)
Select emp.ename as employee, manager.ename as manager
from Employees1 as emp inner join Employees1 as manager
on emp.Mgr = emp.Empno
D) None of the above

11	B	C

Consider the given Orders and Customers table
Orders table (Order_no, Cust, Prodt, Qty, Amt, Discount)
Customers table (Custnbr, Company, Custrep, Creditlim)
Which query will print all the orders showing order number, amount, company name and credit limit of customers?

Q1:
Select Order_no, Amt, Company, Creditlim
from Customers left outer join Orders
on customers.custnbr = orders.cust;
Q2:
Select Order_no, Amt, Company, Creditlim
from Customers right outer join Orders
on customers.custnbr = orders.cust;
Q3:
Select Order_no, Amt, Company, Creditlim
from Customers inner join Orders
on customers.custnbr = orders.cust;
Q4:
Select Order_no, Amt, Company, Creditlim
from Customers outer join Orders
on customers.custnbr = orders.cust;

a) Q1
b) Q2
c) Q3
d) Q4

12	A	D

Consider the two tables A & B

A	B
1	3
2	4
3	5
4	6

What will be the result on application of inner join between these tables?
a)

A	B
1	3
4	4

b)

A	B
3	1
4	4

c)

A	B
2	3
2	4

d)

A	B
3	3
4	4

13	A	C

Consider the given table employees:

EMP_ID	F_NAME	L_NAME	J_DATE	SAL	MGR_ID	DEPT
100	Steven	King	2003-03-17	24000	0	90
101	Neena	Kochhar	2005-09-21	17000	100	90
102	Lex	De Haan	2001-01-13	17000	100	90
103	Alex	Hunold	2006-01-03	9000	102	60
104	Bruce	Ernst	2007-05-21	6000	103	60
105	David	Austin	2005-04-25	4800	103	60
106	Valli	Pata	2006-02-05	4800	103	60
107	Diana	Lorentz	2007-02-07	4200	103	60
108	Nancy	Green	2002-10-17	12008	101	100
109	Daniel	Faviet	2002-05-16	9000	108	100
110	John	Chen	2005-09-28	8200	108	100

Which query returns the expected output?
Display the employees first name, last name and joining date who joined having 2nd letter as 'U' in the month and salary in 5 digits ending with 0.

Query 1: SELECT f_name, l_name, j_date FROM employees WHERE to_char(j_date, 'MONTH') LIKE '_U%' AND length (salary) = 5 and salary LIKE '%0'

Query 2: SELECT f_name, l_name, j_date FROM employees WHERE to_char(j_date, 'MON') LIKE '_U%' AND length (salary) = 5 and salary LIKE '%0'

a) Query 1 is correct
b) Query 2 is correct
c) Both the queries are correct
d) None of the above

14	A	A

Consider the following relations:

Student	
Roll. No	Student_Name
1	Raj
2	Rohit
3	Raj

Performance		
Roll. No	Course	Marks
1	Math	80
1	English	70
2	Math	75
3	English	80
2	Physics	65
3	Math	80

Which is correct option after execution of below query?

Query:
SELECT S. Student_Name, SUM (P.Marks) TOTAL_MARKS FROM Student S, Performance P WHERE S.Roll_No = P.Roll_No AND Marks < 80 GROUP BY S.Student_Name ORDER BY TOTAL_MARKS

a) Marks gained by Raj is 70 and Marks gained by Rohit 140
b) Marks gained by Raj is 140 and Marks gained by Rohit 210
c) Marks gained by Raj is 70 and Marks gained by Rohit 210
d) Marks gained by Raj is 140 and Marks gained by Rohit 140

15	B	C

Consider the given four relational schemas where the underlined attribute(s) is the respective primary keys and identify the schema violating 2NF.

Schema 1: R (A, B)
A → B

Schema 2: R (A, C, D)
AC → D
D → A

Schema 3: R (A, C, G)
AC → G
C → G

Schema 4: R (A, C, E, F)
AC → EF
E → F

a) Schema 1
b) Schema 2
c) Schema 3
d) Schema 4