

Question 1

Correct

Mark 2.00 out of
2.00

Flag question

Let the following relation schemas be given: $R = (A, B, C)$. Let relations $r(R)$ also be given. Which of the following expressions are equivalent.

- I.) $\Pi_A(r)$
- II.) $\{t \mid \exists q \in r (q[A] = t[A])\}$
- III.) $\{< t > \mid \exists p, q (< t, p, q > \in r)\}$
- IV.) $\{t \mid \exists p \in r \exists q \in r (t[A] = p[A] \wedge t[B] = p[B] \wedge t[C] = p[C] \wedge t[D] = q[A])\}$

 I, II and III only I and II only I III, IV only II and III only II, III and IV only

Your answer is correct.

The correct answer is:

I, II and III only

Question 2

Correct

Mark 1.00 out of
1.00

 Flag question

Among objectives of DBMS are ensuring

- (i) data integrity
- (ii) data redundancy
- (iii) data security
- (iv) easy data retrieval

- ii, iv
- i, ii, iii
- i, ii
- i, iii, iv



Your answer is correct.

The correct answer is:

i, iii, iv

Question 3

Correct

Mark 1.00 out of
1.00

 Flag question

The types of quantifiers are

- Existential quantifier
- Both Universal and Local
- Both Universal and Existential
- Local quantifier
- Both Local and Existential
- Universal quantifier



Your answer is correct.

The correct answer is:

Both Universal and Existential

Question 4

Incorrect

Mark 0.00 out of
2.00

Flag question

Consider the relation schema R{D,E,F}. The following set of functional dependencies holds on R,
 $\{ D \rightarrow EF, E \rightarrow F, D \rightarrow E, DE \rightarrow F \}$

The canonical cover of the above functional dependencies is,

- { $D \rightarrow EF, D \rightarrow E$ }
- { $D \rightarrow E, E \rightarrow F$ }
- { $D \rightarrow EF, E \rightarrow F$ }
- { $D \rightarrow EF, DE \rightarrow F$ }



Your answer is incorrect.

The correct answer is:

{ $D \rightarrow E, E \rightarrow F$ }

Question 5

Correct

Mark 1.00 out of
1.00

Flag question

Given the basic ER and relational models, which of the following is INCORRECT?

- An attribute of an entity can be composite
- An attribute of an entity can have more than one value
- In a row of a relational table, an attribute can have more than one value
- In a row of a relational table, an attribute can have exactly one value or a NULL value



Your answer is correct.

The correct answer is:

In a row of a relational table, an attribute can have more than one value

Question 6

Incorrect

Mark 0.00 out of
2.00

Flag question

Consider the following schema –

```
STUDENTS(student_code, first_name, last_name, email, phone_no, date_of_birth, honours_subject, percentage_of_marks);
```

Which of the following code will create a simple view named all_marks_english that contains the names and percentage of marks of the students in the honours_subject 'Eng01'?

- select view all_marks_english as select first_name, last_name, percentage_of_marks from students where honours_subject = 'Eng01'; ✖
- create view all_marks_english as select first_name, last_name, percentage_of_marks from students where honours_subject = 'Eng01';
- None of the mentioned
- create view all_marks_english as (first_name, last_name, percentage_of_marks from students where honours_subject = 'Eng01');

Your answer is incorrect.

The correct answer is:

```
create view all_marks_english as select first_name, last_name, percentage_of_marks from students where honours_subject = 'Eng01';
```

Question 7

Correct

Mark 1.00 out of
1.00

Flag question

Consider the following relation instance,

Depositor

AccID Name Address Balance

1	Mohan	A	10
2	Paul	A	34
3	Jay	B	54
4	Mohan	C	21

The decomposition of the above relation into (AccID, Name) and (Name, Address, Balance) is,

- Neither Lossless nor Lossy Decomposition
- Lossless Join Decomposition
- Lossy Decomposition
- Both Lossless and Lossy Decomposition



Your answer is correct.

The correct answer is:

Lossy Decomposition

Question 8

Correct

Mark 3.00 out of
3.00


Consider the following table

T1**C1 C2 City**

- A 3 City1
- B 3 City2
- C 5 City1
- D 6 City3
- E 3 City5
- F 7 City4
- G 5 City6
- H 3 City4

What will be the output of the following SQL query?

```
SELECT C1 FROM T1 as R Where (Select count(*) from T1 as S Where S.C2 > R.C2) < 3;
```

- C, D, F, G
- A, B, E, H, C, G
- D, F
- A, B, E, H
- C, G



Your answer is correct.

The correct answer is:

C, D, F, G

Question 9

Correct

Mark 2.00 out of
2.00

Flag question

Consider the relation schema R{F, G, H, I, J}. The following set of function dependencies holds on R.

{ F->G, F->H, HI->J, G->I, J->F }

Find the functional dependency which is not implied by the above set?

- GH->HI
- GI->HI
- FH->GH
- HI->FH



Your answer is correct.

The correct answer is:

GI->HI

Question **10**

Correct

Mark 1.00 out of
1.00

 Flag question

A tuple-relational-calculus expression may generate a/an

- Invalid relation
- Composite relation
- Infinite relation
- Finite relation



Your answer is correct.

The correct answer is:

Infinite relation

Question **11**

Correct

Mark 1.00 out of
1.00

Flag question

The _____ operator takes the results of two queries and returns only rows that appear in both result sets.

- Projection
- Difference
- Union
- Intersect



Your answer is correct.

The correct answer is:

Intersect

Question 12

Correct

Mark 1.00 out of
1.00

Flag question

The use of set-valued attributes can lead to designs with _____, which in turn can result in _____.

- Consistent data, Non-redundancy
- redundant data, inconsistency
- inconsistent data, redundancy
- Non-redundant data, Consistency



Your answer is correct.

The correct answer is:

redundant data, inconsistency

Question **13**

Correct

Mark 1.00 out of
1.00

 Flag question 

An expression in the domain relational calculus is of the form?

- $\{P(x_1, x_2, \dots, x_n) \mid < x_1, x_2, \dots, x_n > \}$
- $\{< x_1, x_2, \dots, x_n > \mid P(x_1, x_2, \dots, x_n)\}$
- $\{x_1, x_2, \dots, x_n \mid x_1, x_2, \dots, x_n\}$
- $\{x_1, x_2, \dots, x_n \mid < x_1, x_2, \dots, x_n > \}$

Your answer is correct.

The correct answer is:

$\{< x_1, x_2, \dots, x_n > \mid P(x_1, x_2, \dots, x_n)\}$

Question 14

Consider the following relation instance

Correct

Mark 2.00 out of
2.00

Flag question

R1**ID Marks**

- 1 20
- 2 40
- 3 50
- 4 NULL

If we run the following update sql statement on R1

Update R1 set Marks = Marks + 10;

What will be the output of the following SQL query now,

Select avg(Marks) from R1;

- 32
- 35
- 27.5
- NULL



Your answer is correct.

The correct answers are:

NULL,

35,

32,

27.5

Question 15

Incorrect

Mark 0.00 out
of 2.00

Flag question

Consider the following relations,

manage**name manage**

'A'	'E'
'B'	'C'
'C'	'G'
'D'	'F'
'F'	'E'
'E'	'G'

Emp**name street city**

'A'	'x'	1
'B'	'y'	2
'C'	'z'	3
'D'	'x'	1
'E'	'x'	4
'F'	'y'	2
'G'	'z'	3

$$\sigma_{\text{manage.name} = \text{emp2.name}} (\{\sigma_{\text{emp1.name} = \text{manage.name}} (\rho_{\text{emp1}}(\text{emp}) \times \text{manage})\} \times \rho_{\text{emp2}}(\text{emp}))$$

How many tuples will be there in the output of the above query?

- 5
- 4
- None of the mentioned
- 6
- 7

Your answer is incorrect.

The correct answer is:

6

Question **16**

Correct

Mark 2.00 out of
2.00

 Flag question

The primary key of a weak entity set is formed by the _____ of the identifying entity set, plus the weak entity set's _____.

- Foreign key, discriminator
- Discriminator, Foreign Key
- Primary Key, Foreign Key
- Primary Key, Discriminator
- Discriminator, Primary Key
- Foreign Key, Primary Key



Your answer is correct.

The correct answer is:

Primary Key, Discriminator

Question **17**

Correct

Mark 1.00 out of
1.00

 Flag question

Which one of the following is a procedural language?

- Relational algebra
- Query language
- Domain relational calculus
- Tuple relational calculus



Your answer is correct.

The correct answer is:

Relational algebra

Question **18**

Correct

Mark 1.00 out of
1.00

 Flag question

By data integrity we mean

- maintaining consistent data values
- banning improper access to data
- integrated data values
- not leaking data values



Your answer is correct.

The correct answer is:

maintaining consistent data values

Question **19**

Correct

Mark 1.00 out of
1.00

 Flag question

In a selection statement, the predicate appears as a subscript to

- epsilon
- sigma
- zeta
- delta



Your answer is correct.

The correct answer is:

sigma

Question **20**

Correct

Mark 1.00 out of
1.00

 Flag question

The operation of a relation X, produces Y, such that Y contains only selected attributes of X. Such an operation is :

- Difference
- Intersection
- Union
- Projection



Your answer is correct.

The correct answer is:

Projection

Question **21**

Correct

Mark 1.00 out of
1.00

Flag question

The branch of calculus which is based on mathematical logic is classified as

- indicate calculus
- universal calculus
- local calculus
- predicate calculus



Your answer is correct.

The correct answer is:
predicate calculus

Question **22**

Correct

Mark 1.00 out of
1.00

Flag question

Consider the natural join of a relation R with a relation S. If R has m tuples and S has n tuples. Then the maximum and minimum size of the join respectively are :

- $m+n$ and 0
- $m+n$ and $[m-n]$
- mn and 0
- mn and $m+n$



Your answer is correct.

The correct answer is:

mn and 0

Question 23

Consider the following table

Correct

Mark 2.00 out of
2.00

Flag question

T1**C1 C2 City**

- A 3 City1
- B 3 City2
- C 5 City1
- D 6 City3
- E 3 City5
- F 7 City4
- G 5 City6
- H 3 City4

How many tuples will be there in the output of the following SQL query?

```
SELECT * FROM T1 WHERE C2 > (SELECT AVG(C2) FROM T1 WHERE City ='City4');
```

- 3
- 6
- 4
- 2



Your answer is correct.

The correct answer is:

2

Question **24**

Correct

Mark 2.00 out of
2.00

Flag question

Consider the following schema

R1(A,B,C) and R2 (C,D)

with functional dependencies

$A \rightarrow B$, $B \rightarrow C$

Which of the following statement is correct?

- R1 is in 3NF but R2 not in 3NF
- Both R1 and R2 is in BCNF
- R1 is in BCNF but R2 is not in BCNF
- Neither R1 nor R2 is in BCNF



Your answer is correct.

The correct answers are:

R1 is in BCNF but R2 is not in BCNF,

Both R1 and R2 is in BCNF,

Neither R1 nor R2 is in BCNF,

R1 is in 3NF but R2 not in 3NF

Question **25**

Correct

Mark 2.00 out of
2.00

 Flag question

Consider the following statements for a good database design,

- (i) A good database design is expandable with growth and changes in organization
- (ii) A good database design is easy to change when software changes
- (iii) A good database design ensures data integrity
- (iv) A good database design allows access to only authorized users

Which of the above statements are correct,

- i, ii, iii
- i, ii
- i, ii, iii, iv
- ii, iii



Your answer is correct.

The correct answer is:

i, ii, iii, iv

Question **26**

Correct

Mark 2.00 out of
2.00

 Flag question

Consider the relation schema R(A, B, C, D). R holds the following functional dependencies,

- I.) A $\rightarrow\!\!\!\rightarrow$ B
- II.) BC $\rightarrow\!\!\!\rightarrow$ B
- III.) AC $\rightarrow\!\!\!\rightarrow$ A
- IV.) C $\rightarrow\!\!\!\rightarrow$ D
- V.) CD $\rightarrow\!\!\!\rightarrow$ B
- VI.) CD $\rightarrow\!\!\!\rightarrow$ D
- VII.) DA $\rightarrow\!\!\!\rightarrow$ AD

Which of the above functional dependencies are trivial?

- VII, IV, II, III
- III, IV, VII, II
- VI, VII, II, III
- III, V, VII, I
- VI, VII, I, III



Your answer is correct.

The correct answer is:

VI, VII, II, III

Question **27**

Incorrect

Mark 0.00 out of
2.00

 Flag question

The identifying relationship is _____ from the weak entity set to the identifying entity set, and the participation of the weak entity set in the relationship is _____.

- One-to-many, partial
- Many-to-one, partial
- One-to-one, total
- One-to-one, partial
- Many-to-one, total
- One-to-many, total



Your answer is incorrect.

The correct answer is:

Many-to-one, total

Question 28

Correct

Mark 2.00 out of
2.00

Flag question

The following table has two attributes A and C where A is the primary key and C is the foreign key referencing A with on-delete cascade.

A C

—

2 4

3 4

4 3

5 2

7 2

9 5

6 4

—

The set of all tuples that must be additionally deleted to preserve referential integrity when the tuple (2,4) is deleted is:

- (5,2) and (7,2)
- (3,4), (4,3) and (6,4)
- (3,4) and (6,4)
- (5,2), (7,2) and (9,5)



Your answer is correct.

The correct answer is:

(5,2), (7,2) and (9,5)

Question **29**

Incorrect

Mark 0.00 out of
2.00

 Flag question

Consider the following statement,

- A.) BCNF is more stricter than 3NF
- B.) Any schema with only two attributes is in BCNF
- C.) Any schema with only two attributes is in 3NF but not in BCNF

Which of the above statements are correct.

- Only C is correct
- A and B are correct.
- Only A and C are correct ✖
- Only A is correct
- A, B and C are correct
- Only B and C are correct

Your answer is incorrect.

The correct answer is: A and B are correct.

Question **30**

Correct

Mark 1.00 out of
1.00

 Flag question

In which of the following, a separate schema is created consisting of that attribute and the primary key of the entity set.

- A multivalued attribute of an entity set
- A many-to-many relationship set
- None of the mentioned
- A one-to-many relationship set



Your answer is correct.

The correct answer is:

A multivalued attribute of an entity set

Question **31**

Incorrect

Mark 0.00 out of
1.00

 Flag question

Consider the following two statements regarding the use of functional dependencies,

- A.) To test instances of relations to check whether they satisfy a given set F of functional dependencies
- B.) To specify constraints on the set of legal relations.

Which of the above statement is true,

- A is false but B is true
- A is true but B is false
- Both A and B are True
- Both A and B are false



Your answer is incorrect.

The correct answer is:

Both A and B are True

Question **32**

Correct

Mark 2.00 out of
2.00

 Flag question

Consider the dept_advisor(S_ID, I_ID, dept_name) schema, with the following functional dependencies;

- A) $I_ID \rightarrow dept_name$
- B) $S_ID, dept_name \rightarrow I_ID$

Which of following statement is correct,

- -
 -
 -
- Both A and B are satisfying the BCNF rule
- B is satisfying the BCNF but A is violating the BCNF rule
- None of these satisfying the BCNF rule
- A is satisfying the BCNF but B is violating the BCNF rule



Your answer is correct.

The correct answer is:

B is satisfying the BCNF but A is violating the BCNF rule

Question **33**

Correct

Mark 1.00 out of
1.00

Flag question

Which one of the following statements about normal forms is FALSE?

- Any relation with two attributes is in 3NF
- BCNF is stricter than 3NF
- Lossless, dependency-preserving decomposition into 3NF is always possible
- Lossless, dependency-preserving decomposition into BCNF is always possible



Your answer is correct.

The correct answer is:

Lossless, dependency-preserving decomposition into BCNF is always possible

Question **34**

Incorrect

Mark 0.00 out of
2.00

 Flag question

Consider the following table,

Table

1

col1 col2

- A 5
- B 7
- C 6
- D 1

Consider the following query,

Select col2 from (select col2 from table1 as S where S.col2=(select max(col2) from table1)) as R limit 1;

The output of the above query is

5



One possible correct answer is: 7

Question **35**

Incorrect

Mark 0.00 out of
1.00

 Flag question

A special case of multisets, which have only one copy of each element, is known to be

- Aggregator
- Sets
- Associator
- Elements



Your answer is incorrect.

The correct answer is:

Sets

Question 36

Incorrect

Mark 0.00 out of
3.00

Flag question

Consider the following table

T1**C1 C2 City**

- A 3 City1
- B 3 City2
- C 5 City1
- D 6 City3
- E 3 City5
- F 7 City4
- G 5 City6
- H 3 City4

What will be the output of the following SQL query?

```
SELECT C1 FROM T1 y WHERE 2=(SELECT COUNT(DISTINCT C2) FROM T1 p  
WHERE y.C2<=p.C2);
```

- A, B, E, H
- D
- C, G
- A, B, C, G
- F

Your answer is incorrect.

The correct answer is:

D

Question **37**

Correct

Mark 2.00 out of
2.00

Flag question

In the binary many-to-one and one-to-many relationship set, _____ can be used as primary key of the relationship, whereas in the binary many-to-many relationship, _____ becomes the primary key.

- The primary key of the entity set on the "one" side, the union of the primary key from participating entity set
- The primary key of the entity set on the "many" side, the union of the primary key from participating entity set ✓
- The primary key of the entity set on the "one" side, one of the primary key from participating entity set
- The primary key of the entity set on the "many" side, one of the primary key from participating entity set

Your answer is correct.

The correct answer is:

The primary key of the entity set on the "many" side, the union of the primary key from participating entity set

Question **38**

Correct

Mark 2.00 out of
2.00

 Flag question

Consider a relation schema $R(A, B, C, D, E, F, G, H, I, J)$ and a set of functional dependencies $\{AB \rightarrow C, B \rightarrow F, A \rightarrow DE, D \rightarrow IJ, F \rightarrow GH\}$. If we decompose R into $R1\{A, B, C\}, R2\{A, D, E\}, R3\{B, F\}, R4\{F, G, H\}, R5\{D, I, J\}$ then this decomposition

- Loss less and not dependency preserving
- Lossy and dependency preserving
- Lossy and not dependency preserving
- Loss less and dependency preserving



Your answer is correct.

The correct answer is:

Loss less and dependency preserving

Question 39

Correct

Mark 2.00 out of
2.00

Flag question

Let R and S be two relations with the following schema

R (P,Q,R1,R2,R3)

S (P,Q,S1,S2)

Where {P, Q} is the key for both schemas. Which of the following queries are equivalent?

- I. $\prod_P (R \bowtie S)$
- II. $\prod_P (R) \bowtie \prod_P (S)$
- III. $\prod_P (\prod_{P,Q} (R) \cap \prod_{P,Q} (S))$
- IV. $\prod_P (\prod_{P,Q} (R) - (\prod_{P,Q} (R) - \prod_{P,Q} (S)))$

- I and III only
- I, II and III only
- II, III and IV only
- III and IV only
- I, III and IV only



Your answer is correct.

The correct answer is:

I, III and IV only

Question **40**

Correct

Mark 2.00 out of
2.00

Flag question

Consider the relation schema R (F, G, H, I, J). The following set of functional dependencies are given $\{F \rightarrow G, F \rightarrow H, HI \rightarrow J, G \rightarrow I, J \rightarrow F\}$ on R.

Which of the following functional dependencies is NOT implied by the above set of functional dependencies?

- HI \rightarrow FH
- GH \rightarrow HI
- GI \rightarrow HI
- FH \rightarrow GH



Your answer is correct.

The correct answer is:

GI \rightarrow HI

Question **41**

Correct

Mark 1.00 out of
1.00

 Flag question

A relation basically is by definition a subset of a

- Cartesian product
- Projection
- Union
- Selection



Your answer is correct.

The correct answer is:

Cartesian product

Question **42**

Correct

Mark 1.00 out of
1.00

Flag question

A query expression in the tuple relational calculus is done as

- {t| P(t)}
- {p| t(p)}
- {p| P(t)}
- {p| t(t)}



Your answer is correct.

The correct answer is:

{t| P(t)}

Question 43

Incorrect

Mark 0.00 out of
2.00

Flag question

Consider the following relation,

R**Name Number**

Amit 2

Akash 4

Arif 3

Akhil 5

 $\pi_{r1.Number, r2.Name} (\sigma_{r1.Number > r2.Number} ((p_{r1}(R)) \times (p_{r2}(R))))$

The output of the above query will include the following names,

- Only Akhil
- Amit, Akash, Arif
- Akash, Arif, Akhil
- Only Amit
- Akash and Arif

Your answer is incorrect.

The correct answer is:

Amit, Akash, Arif

Question **44**

Correct

Mark 1.00 out of
1.00

 Flag question

If E1 and E2 are relational algebra expressions, then which of the following is NOT a relational algebra expression?

- E1 \cup E2
- E1 / E2
- E1 \times E2
- E1 - E2



Your answer is correct.

The correct answer is:

E1 / E2

Question **45**

Incorrect

Mark 0.00 out of
2.00

 Flag question

Which of the following set of dependencies is suitable for making a relation R(ABCD) to be in 3 NF but not in BCNF.

- {A→BCD, B→CD, C→D}
- {AB→CD, C→DA}
- {AB→ CD, A→ C, D→ B} ✖
- {AB→CD, C→A, D→B}

Your answer is incorrect.

The correct answer is:

{AB→CD, C→A, D→B}

Question **46**

Correct

Mark 1.00 out of
1.00

 Flag question

Function dependencies are referred to as _____ whereas multivalued dependencies are referred to as _____.

- Tuple-generating dependencies, equality-generating dependencies
- Equality-generating dependencies, attribute-generating dependencies
- Equality-generating dependencies, tuple-generating dependencies
- Attribute-generating dependencies, tuple-generating dependencies



Your answer is correct.

The correct answer is:

Equality-generating dependencies, tuple-generating dependencies

Question **47**

Incorrect

Mark 0.00 out of
1.00

 Flag question

The operators in SELECT operation statement such as 'and' , 'or' and 'not' are classified as

- insertion operators
- tuple operators
- string operators
- Boolean operators



Your answer is incorrect.

The correct answer is:

Boolean operators

Question **48**

Correct

Mark 1.00 out of
1.00

 Flag question

Consider the relation schema R{A, B, C, D, E}. Schema R holds the following function dependencies,

$A \rightarrow B$

$B \rightarrow C$

$BC \rightarrow A$

$A \rightarrow D$

$E \rightarrow A$

$D \rightarrow E$

Which of the following is not a key?

- A
- E
- B,C
- D



Your answer is correct.

The correct answer is:

B,C

Question 49

Incorrect

Mark 0.00 out of
2.00

Flag question

Consider the following schema –

HONOURS SUBJECT(subject_code, subject_name, department_head);

LOCATIONS(subject_code, department_name, location_id, city);

Select the right query for retrieving records from the tables HONOURS SUBJECT and LOCATIONS with the ON clause

- select h.subject_name, l.department_name, h.department_head, l.city from honours_subject h, location l
on(subject_code); ✖
- select h.subject_name, l.department_name, h.department_head, l.city from honours_subject h join location l
on(h.subject_code = l.subject_code);
- select h.subject_name, l.department_name, h.department_head, l.city from honours_subject h join location l
on(subject_code);
- None of the mentioned

Your answer is incorrect.

The correct answer is:

select h.subject_name, l.department_name, h.department_head, l.city from honours_subject h join location l
on(h.subject_code = l.subject_code);

Question 50

Incorrect

Mark 0.00 out of
2.00

Flag question

Consider the relation schema $R\{H, I, J, K, L, M, N\}$. The following functional dependencies hold on R .

$$F = \{HI \rightarrow JK, HM \rightarrow K, KL \rightarrow M, J \rightarrow N, M \rightarrow L, N \rightarrow H\}$$

Which one of the following is a false option?

- $HM^+ = \{HJKLMN\}$
- $JM^+ = \{HJKLMN\}$
- $HI^+ = \{HIJKN\}$
- $IN^+ = \{HIJKN\}$



Your answer is incorrect.

The correct answer is:

$$HM^+ = \{HJKLMN\}$$

Question **51**

Incorrect

Mark 0.00 out of
1.00

 Flag question

Consider two tuples A and B, the operation whose result includes tuples that are included in both relations is classified as

- square of relation A and B X
- difference of relation A and B
- union of relation A and B
- intersection of relation A and B

Your answer is incorrect.

The correct answer is:

intersection of relation A and B

Question **52**

Incorrect

Mark 0.00 out of
2.00

 Flag question

Which of the following tuple relational calculus expression(s) is/are equivalent to $\forall t \in r(P(t))$?

- I. $\neg \exists t \in r (P(t))$
- II. $\exists t \notin r(P(t))$
- III. $\neg \exists t \in r(\neg P(t))$
- IV. $\exists t \notin r(\neg P(t))$

II only



I only

III only

III and IV only

Your answer is incorrect.

The correct answer is:

III and IV only

Question 53

Incorrect

Mark 0.00 out of
2.00

Flag question

Consider a relational schema $r(R)$, and let $A \subseteq R$ and $B \subseteq R$. Given an instance of $r(R)$, we can say that the instance satisfies the functional dependency $A \rightarrow B$ if for all pairs of tuples t_1 and t_2 in the instance such that,

- A.) $t_1[A] = t_2[A] \Rightarrow t_1[B] = t_2[B]$
- B.) $t_1[A] \neq t_2[A] \Rightarrow t_1[B] \neq t_2[B]$
- C.) $t_1[A] = t_2[B] \Rightarrow t_1[B] = t_2[A]$

- Only A is correct
- A, B and C are correct
- Only C is correct
- Only B is correct
- Both A and B is correct
- Both B and C is correct



Your answer is incorrect.

The correct answer is:

Only A is correct

Question **54**

Correct

Mark 1.00 out of
1.00

 Flag question

Consider two tuples B and C, the operation whose result includes tuples that are included in both relations or either in B or C is classified as

- union of relation B and C
- square of relation B and C
- intersection of relation B and C
- difference of relation B and C



Your answer is correct.

The correct answer is:

union of relation B and C

Question **55**

Correct

Mark 1.00 out of
1.00

 Flag question

Given the basic ER and relational models, which of the following is INCORRECT?

- In a row of a relational table, an attribute can have more than one value 
- In a row of a relational table, an attribute can have exactly one value or a NULL value
- An attribute of an entity can be composite
- An attribute of an entity can have more than one value

Your answer is correct.

The correct answer is:

In a row of a relational table, an attribute can have more than one value

Question **56**

Correct

Mark 2.00 out of
2.00

 Flag question

If a functional dependency set F is { $A \rightarrow B$, $BC \rightarrow E$, $ED \rightarrow A$, $EF \rightarrow G$, $E \rightarrow F$ }, find the closure of attribute set (AC)

- {A,B,C,D,E,G}
- {A,B,C,D,E,F,G}
- {A,B,C,E,F,G}
- {A,B,C,D,E,F}



Your answer is correct.

The correct answer is:

{A,B,C,E,F,G}

Question 57

Correct

Mark 1.00 out of
1.00

Flag question

Suppose (A, B) and (C,D) are two relation schemas. Let r1 and r2 be the corresponding relation instances. B is a foreign key that refers to C in r2. If data in r1 and r2 satisfy referential integrity constraints, which of the following is ALWAYS TRUE?

- (A) $\Pi_B(r_1) - \Pi_C(r_2) = \emptyset$
- (B) $\Pi_C(r_2) - \Pi_B(r_1) = \emptyset$
- (C) $\Pi_B(r_1) = \Pi_C(r_2)$
- (D) $\Pi_B(r_1) - \Pi_C(r_2) \neq \emptyset$

- D
- B
- C
- A
- A and C both



Your answer is correct.

The correct answer is: A

Question 58

Correct

Mark 2.00 out
of 2.00

Flag question

Consider the below tables Emp1, Emp2 and Contact.

Table Emp1

Id	Name	Age
15	Shreya	24
12	Arun	60
99	Rohit	11

Table Emp2

Id	Name	Age
15	Shreya	24
25	Hari	40
98	Rohit	28
99	Rohit	11

Table Contact

Id	Phone	Area
10	2200	02
99	2100	01

If you run the below query, then how many tuples will be there in the final result?

```
SELECT Emp1.id
FROM   Emp1
WHERE  Emp1.age > ALL (SELECT Emp2.age
                        FROM   Emp2
                        WHERE  Emp2.name = "Rohit")
```

- 1
- 4
- 3
- 2

Your answer is correct.

The correct answer is:

2

Question **59**

Not answered

Marked out of
2.00

 Flag question

Consider the following statement about the good database design,

- (i) A good database design caters primarily to current needs
- (ii) A good database design caters to current and future needs as organizations grow
- (iii) A good database design has to be modified when hardware is upgraded
- (iv) A good database design ensures data security

Which of the above statements is/are correct?

- i, ii, iii
- ii, iv
- i, ii
- iii, iv

Your answer is incorrect.

The correct answer is:

ii, iv

Question **60**

Not answered

Marked out of

2.00

Flag question

Consider the relation scheme $R = \{A, B, C, D, E, F, G, H, I, J\}$. R holds the following set of functional dependencies $\{ \{A, B\} \rightarrow \{C\}, \{B\} \rightarrow \{E, F\}, \{A, D\} \rightarrow \{G, H\}, G \rightarrow \{I\}, H \rightarrow \{J\} \}$. What is the key for R ?

- {A, B}
- {B, D}
- {A}
- {A, B, D, G, H}
- {B, D, G}
- {A, B, D}

Your answer is incorrect.

The correct answer is:

{A, B, D}

Question 8

Correct

Mark 1.00 out of
1.00

Flag question

Disk I/O operation is performed in units of,

- One record
- One file
- One block
- One sector



Your answer is correct.

The correct answer is:

One block

Question **11**

Correct

Mark 1.00 out of
1.00

 Flag question

To have a file hold a list, it is necessary to

- Identify the name, width and type of the fields of each record.
- All of the mentioned
- Identify the records in the list
- Decide which fields will be used as sort or index keys



Your answer is correct.

The correct answer is:

All of the mentioned

Question 5

Correct

Mark 1.00 out of
1.00

Flag question

A measure that computes the reliability of the disk is called,

- Mean time to result
- Mean time to access
- Mean time to failure
- Mean time to success



Your answer is correct.

The correct answer is:

Mean time to failure

Question 4

Correct

Mark 1.00 out of
1.00

 Flag question

The disk controller uses _____ at each sector to ensure that the data is not corrupted on data retrieval.

- ErrorCode
- Checksum
- Parity
- ECC



Your answer is correct.

The correct answer is:

Checksum

Question **9**

Correct

Mark 1.00 out of
1.00

Flag question

The time for repositioning the arm is called the _____ and it increases with the distance that the arm must move.

- Rotational latency time
- Seek time
- Average seek time
- Access time



Your answer is correct.

The correct answer is:

Seek time

Question 1

Incorrect

Mark 0.00 out of
1.00

 Flag question

Which RAID level gives block level striping with single distributed parity?

- RAID 1
- RAID 5
- RAID 2
- RAID 6



Your answer is incorrect.

The correct answer is:

RAID 5

Question 7

Incorrect

Mark 0.00 out of
2.00

Flag question

For keeping the variable length records in the block, the slotted page structure is commonly used. There is a header at the beginning of each block, containing the following information:

- I.) The number of record entries in the header
- II.) The end of free space in the block
- III.) An array whose entries contain the location and size of each record.

If a record is deleted then, which of the above information will change

- I and III only
- I and II only
- II and III only
- I, II and III only



Your answer is incorrect.

The correct answer is:

I, II and III only

Question 6

Incorrect

Mark 0.00 out of
2.00

Flag question

- Which of the following problems need to be solved by the technique for implementing variable-length record.
- I.) How to represent a single record in such a way that individual attribute can be extracted easily
 - II.) How to follow the sequence of the record in the file
 - III.) How to fetch the record from the Buffer
- II only
 - II and III both
 - I only
 - I and II both



Your answer is incorrect.

The correct answer is:

I only

Question **10**

Incorrect

Mark 0.00 out of
1.00

 Flag question

If you want to read the records from two different relations using a single I/O operation, which file organization will you prefer?

- Hash File Organization
- Clustering File Organization
- Sequential File organization
- Heap File organization



Your answer is incorrect.

The correct answer is:

Clustering File Organization

Question 3

Correct

Mark 1.00 out of
1.00

Flag question

Variable length record arise in database system file due to storage of multiple record types in a file. Here multiple record type means,

- Records having attributes of multiple types
- Records with variable length attributes
- Records having multiple attributes
- Records from different relations



Your answer is correct.

The correct answer is:

Records from different relations

Question **12**

Correct

Mark 2.00 out of
2.00

 Flag question

In the fixed length record file, sometimes we keep the header at the beginning of the file. The key information that header keeps is,

- I.) The address of the first record whose contents are deleted
 - II.) The array of addresses of all the records in the file
 - III.) The array of addresses and size of all the records in the file
 - IV.) The offset and length for different attributes in the record
-
- I and II Only
 - I, II and III Only
 - IV Only
 - I Only
 - II and III Only
 - II Only



Your answer is correct.

The correct answer is: I Only

Question 2

Correct

Mark 1.00 out of
1.00

Flag question

_____ is the time from when a read or write request is issued to when data transfer begins.

- Rotational latency time
- Access time
- Average seek time
- Seek time



Your answer is correct.

The correct answer is:

Access time

Question 1

Incorrect

Mark 0.00 out of
2.00

Flag question

Suppose we have two relations location(city, state, country) and weather(city, temperature, humidity, condition). What will be the query for finding the countries where the weather condition is cloudy.

- Select country from location where city in (select city from location where condition = 'cloudy');
- Select country from location where city in (select city from weather where condition = 'cloudy')
- Select country from location where condition = 'cloudy';
- Select country from location where city union (select city from weather where condition = 'cloudy');
- Select country from location where city intersect (select city from weather where condition = 'cloudy');



Your answer is incorrect.

The correct answer is:

Select country from location where city in (select city from weather where condition = 'cloudy')

Question 2

Correct

Mark 1.00 out of
1.00

Flag question

Which one of the following keyword is used to find out the number of values in a column?

- Total
- Count
- Add
- Sum



Your answer is correct.

The correct answer is:

Count

Question 3

Incorrect

Mark 0.00 out of
1.00

Flag question

Which of the following statements are correct about the Views?

- I.) A View is a special procedure which executes when certain event occurs
- II.) A View is a virtual relation which results of executing a pre-compiled query.
- III.) A View is not part of the physical database schema.
- IV.) A View is a database diagram

II and III only

I and III only

II and IV only

I and IV only



Your answer is incorrect.

The correct answer is:

II and III only

Question 4

Incorrect

Mark 0.00 out of
1.00

 Flag question

Which of the SQL command is correct,

- I.) Select Username AND Password From user
- II.) Select Username, Password From user
- III.) Select Username, Password Where userid=1
- IV.) Select Username, Password From user Where userid=1

- II, III and IV only
- I, II and IV only
- I and III only
- II and III only
- II and IV only



Your answer is incorrect.

The correct answer is:

II and IV only

Question 5

Incorrect

Mark 0.00 out of
1.00

Flag question

Data integrity constraints are used to:

- Improve the quality of data entered for a specific property
- Prevent users from changing the values stored in the table
- Control who is allowed access to the data
- Ensure that duplicate records are not entered into the table



Your answer is incorrect.

The correct answer is:

Improve the quality of data entered for a specific property

Question 6

Correct

Mark 3.00 out of
3.00

Flag question

Consider the following relation

Table enrolled

student course

abc	c1
xyz	c1
abc	c2
pqr	c1

Table paid

student amount

abc	20000
xyz	10000
rst	10000

Consider the following queries,

Query1: select student from enrolled where student in (select student from paid)

Query2: select student from paid where student in (select student from enrolled)

Query3: select E.student from enrolled E, paid P where E.student = P.student

Query4: select student from paid where exists

(select * from enrolled where enrolled.student = paid.student)

Which one of the following statements is correct about the output of the above queries?

- Query4 will return same number of rows as Query1
- Query1 and Query2 return different row sets and Query3 returns fewer rows than Query2
- All queries return identical row sets
- Query2 and Query4 return identical row sets



Your answer is correct.

The correct answer is:

Query2 and Query4 return identical row sets

Question 7

Incorrect

Mark 0.00 out of
2.00

Flag question

Suppose we have the relations $X1(a, b)$ and $X2(c,d)$. Consider the following query,

```
select distinct a, b  
from X1, X2
```

The output of the above query will definitely be the same as $X1$ if,

- X2 has no duplicates and $X1$ is non-empty
- $X1$ and $X2$ have no duplicates
- $X1$ has no duplicates and $X2$ is non-empty
- $X1$ and $X2$ have the same number of tuples



Your answer is incorrect.

The correct answer is:

$X1$ has no duplicates and $X2$ is non-empty

Question **8**

Correct

Mark 3.00 out of
3.00

Flag question

Let s be a relation instance with schema $S = (U, V, W, X, Y, Z)$. The following functional dependencies hold on S

$$X \rightarrow U$$

$$U \rightarrow V$$

$$VW \rightarrow X$$

$$Y \rightarrow W$$

Using the above mentioned functional dependencies what may be the possible candidate keys of S ?

- UYZ, VYZ, XYZ
- UYZ, VYZ, VWZ
- UY, VY, XY
- UY, VY



Your answer is correct.

The correct answer is:

UYZ, VYZ, XYZ

Question 9

Correct

Mark 2.00 out of
2.00

Flag question

Find the names of those students with section and marks whose marks grater than 60 but section must be either A or B.

- Select name, section, marks from student_data where section = A or section = B or marks > 60;
- Select name, section, marks from student_data where section = A and section = B and marks > 60;
- Select name, section, marks from student_data where section = A or B and marks > 60;
- Select name, section, marks from student_data where section = A or section = B and marks > 60; ✓
- Select name, section, marks from student_data where section = A and section = B or marks > 60;

Your answer is correct.

The correct answer is: Select name, section, marks from student_data where section = A or section = B and marks > 60;

Question **10**

Correct

Mark 1.00 out of
1.00

Flag question

An entity in A is associated with at most one entity in B. An entity in B, however, can be associated with any number (zero or more) of entities in A. From A to B, this is called,

- One to One
- Many to one
- Many to Many
- One to many



Your answer is correct.

The correct answer is:

Many to one

Question 11

Correct

Mark 1.00 out of
1.00

 Flag question

Which of the following is a basic form of grant statement?

- GRANT 'privilege list'
ON 'relation name or view name'
TO 'user/role list';
- GRANT 'privilege list'
TO 'user/role list'
- GRANT 'privilege list'
ON 'user/role list'
TO 'relation name or view name';
- GRANT 'privilege list'
ON 'relation name or view name'
ON 'user/role list';



Your answer is correct.

The correct answer is:

```
GRANT 'privilege list'  
ON 'relation name or view name'  
TO 'user/role list';
```

Question **12**

Incorrect

Mark 0.00 out of
1.00

 Flag question

What will be the output of the following query,

```
select distinct T.name  
from instructor as T, instructor as S  
where T.salary > S.salary and S.dept name = 'Biology';
```

- Find names of instructors with salary greater than that of some instructor in the Biology department.
- Find names of instructors with salary greater than that of at least two instructor
- Find names of instructors with salary greater than that of at least two instructor in the Biology department.
- Find names of instructors with salary greater than that of all instructor in the Biology department. X

Your answer is incorrect.

The correct answer is: Find names of instructors with salary greater than that of some instructor in the Biology department.

Question 13

Incorrect

Mark 0.00 out of
1.00

Flag question

Select the correct statement for creating a domain for the monthly salary of the employee, which ensure that the values greater than or equal to 15000 are only allowed in the domain,

- CREATE DOMAIN MonthlySalary NUMERIC(8,2)
CONSTRAINT salary Value>=15000;
- CREATE DOMAIN MonthlySalary NUMERIC(8,2)
CONSTRAINT salary Value>=15000.00 Not Null;
- CREATE DOMAIN MonthlySalary NUMERIC(8,2)
CONSTRAINT salary Check(value >= 15000.00);
- CREATE DOMAIN MonthlySalary NUMERIC(8,2)
CONSTRAINT salary Check(value in (15000.00));



Your answer is incorrect.

The correct answer is:

```
CREATE DOMAIN MonthlySalary NUMERIC(8,2)
CONSTRAINT salary Check(value >= 15000.00);
```

Question **14**

Correct

Mark 1.00 out of
1.00

Flag question

If a generalization constraint from person to student and employee allows the same person to be student as well as employee then it is called,

- Partial
- Total
- Overlapping
- Disjoint



Your answer is correct.

The correct answer is:

Overlapping

Question 15

Correct

Mark 6.00 out
of 6.00

Flag question

Consider the following relations,

manage**name manage**'A' 'E'
'B' 'C'
'C' 'G'
'D' 'E'
'F' 'E'
'E' 'G'**Emp****name street city**'A' 'X' 1
'B' 'Y' 2
'C' 'z' 3
'D' 'X' 1
'E' 'X' 4
'F' 'Y' 2
'G' 'z' 3 $\pi_{\text{manage.name}}(\sigma_{\text{emp1.city} = \text{emp2.city} \wedge \text{manage.manage} = \text{emp2.name}} \{ (\sigma_{\text{emp1.name} = \text{manage.name}} (\rho_{\text{emp1}}(\text{emp}) \times \text{manage})) \times \rho_{\text{emp2}}(\text{emp}) \})$

Output of the above query will include the following names,

- A only
- A, D only
- C only
- A, C, D only
- A, C only

Your answer is correct.

The correct answer is:

C only

Question **16**

Incorrect

Mark 0.00 out of
2.00

Flag question

Let R and S be two relations with the following schema

R (P,Q,R1,R2,R3)S (P,Q,S1,S2)

Where {P, Q} is the key for both schemas. Which of the following queries are equivalent?

- I. $\Pi_P(R \bowtie S)$
- II. $\Pi_P(R) \bowtie \Pi_P(S)$
- III. $\Pi_P^l(\Pi_{P,Q}(R) \cap \Pi_{P,Q}(S))$
- IV. $\Pi_P(\Pi_{P,Q}(R) - (\Pi_{P,Q}(R) - \Pi_{P,Q}(S)))$

- Only I and III
- Only I and II
- Only I, II and III
- Only I, III and IV



Your answer is incorrect.

The correct answer is:

Only I, III and IV

Question 17

Incorrect

Mark 0.00 out
of 3.00 Flag question

Consider the following relation schema for the bus booking,

Traveller(TID, Tname, Age)

Booking(TID, Class, Bid)

Table: Traveller

Tid	Tname	Age
0	Sachin	65
1	Rahul	66
2	Sourav	67
3	Anil	69

Table : Booking

Tid	Class	Bid
0	AC	8200
1	AC	8201
2	AC	8201
5	AC	8203
1	SC	8204
3	SC	8202

If we run the following SQL query for the above instance of the tables then, What Tids are returned?

```
SLECT Tid
FROM Booking
WHERE class = 'AC' AND
      EXISTS (SELECT *
               FROM Traveller
               WHERE age > 65 AND
                     Traveller.Tid = Booking.Tid)
```

 1, 2 1, 3 1, 5 1, 0 2, 5

Your answer is incorrect.

The correct answer is:

1, 2

Question 18

Incorrect

Mark 0.00 out of
1.00

Flag question

Select the correct statement for providing the delete authorization to the employee.



CREATE ROLE employee;
 GRANT DELETE employee_info
 TO employee;

CREATE ROLE employee ;
 GRANT DELETE TO employee;

CREATE ROLE employee;
 GRANT DELETE ON employee_info
 TO employee;

CREATE ROLE employee;
 GRANT SELECT ON employee_info
 TO employee;

Your answer is incorrect.

The correct answer is:

```
CREATE ROLE employee;  
GRANT DELETE ON employee_info  
TO employee;
```

Question 19

Correct

Mark 3.00 out
of 3.00

Flag question

Consider the following relations

employee**empId empName empAge**

1	'AB'	25
2	'CD'	23
3	'EF'	31
4	'QW'	27
5	'BD'	30
6	'AD'	32
7	'EQ'	26

dependent**depId eId depName depAge**

1	1	'ab'	29
2	1	'bd'	12
3	2	'eq'	15
4	3	'qr'	33
5	3	'tr'	30
6	4	'rt'	13
7	6	'we'	36
8	7	'ut'	35

 $\pi_{\text{empId}}(\text{employee}) - \pi_{\text{empId}}(\sigma_{\text{employee.empId} = \text{dependent.eId} \wedge \text{employee.empAge} < \text{depAge}}(\text{employee} \times \text{dependent}))$

The above query will give the following employee ids.

- 1, 3, 5
- 6, 7
- 1, 4, 6
- 2, 4, 5
- 2, 3, 4

Your answer is correct.

The correct answer is:

2, 4, 5

Question **20**

Correct

Mark 2.00 out of
2.00

 Flag question

Select the correct result of following logical expressions,

- I.) Unknown OR True
 - II.) True AND Unknown
 - III.) Unknown AND False
 - IV.) NOT Unknown
-
- (I.) True (II.) Unknown (III.) False (IV.) Unknown
 - (I.) Unknown (II.) Unknown (III.) False (IV.) False
 - (I.) True (II.) False (III.) False (IV.) Unknown
 - (I.) Unknown (II.) False (III.) False (IV.) Unknown



Your answer is correct.

The correct answer is:

(I.) True (II.) Unknown (III.) False (IV.) Unknown

Question **21**

Incorrect

Mark 0.00 out of
1.00

 Flag question

If you want to list all the tuples of the weather relation where the temperature is in the range of 60 to 90, then what condition will be used in the Where clause?

- Where temperature in between 60 to 90
- Where temperature in (60 to 90) ✖
- Where temperature exists (60 to 90)
- Where temperature between 60 to 90

Your answer is incorrect.

The correct answer is:

Where temperature between 60 to 90

Question 22

Correct

Mark 3.00 out of
3.00

Flag question

Consider the following relation,

R**Name Number**

Amit 2

Akash 4

Arif 3

Akhil 5

 $\pi_{r1.Number, r2.Name} (\sigma_{r1.Number < r2.Number} ((\rho_{r1}(R)) \times (\rho_{r2}(R))))$

The output of the above query will include the following names,

- Akash and Arif
- Amit, Akash, Arif
- Only Akhil
- Akash, Arif, Akhil
- Only Amit



Your answer is correct.

The correct answer is:

Akash, Arif, Akhil

Question **23**

Incorrect

Mark 0.00 out of
2.00

Flag question

Suppose we have two relations location(city, state, country) and weather(city, temperature, humidity, condition). What will be the query for finding the names of all cities with their temperature, humidity and countries.

- Select location.city, temperature, humidity, country from weather, location where city = select city from location where location.city = weather.city; ✖
- Select city, temperature, humidity, country from location;
- Select location.city, temperature, humidity, country from weather, location where weather.city=location.city;
- Select weather.city, temperature, humidity, country from weather, location;

Your answer is incorrect.

The correct answer is:

Select location.city, temperature, humidity, country from weather, location where weather.city=location.city;

Question 24

Incorrect

Mark 0.00 out of
6.00

Flag question

An organization keeps the following relations to maintain all the imports,

`Product(pid:integer, pname:string, color:string)`

`Distributor(did:integer, dname:string, dcity:string, dstreet:string)`

`Inventory(did:integer, pid:integer, price:numeric)`

An employee runs the following query to these relations

```
SELECT D.dname
FROM Distributor D
WHERE D.did NOT IN (SELECT I.did
                     FROM Inventory I
                     WHERE I.pid NOT IN (SELECT P.pid
                                         FROM Product P
                                         WHERE P.color <> 'blue'))
```

What would be the correct interpretation of the above query?

- Find the names of all distributors who have distributed only blue parts.
- Find the names of all distributors who have not distributed only blue parts.
- Find the names of all distributor who have not distributed a non-blue product.
- Find the names of all distributors who have distributed a non-blue product.



Your answer is incorrect.

The correct answers are:

Find the names of all distributors who have distributed a non-blue product.,

Find the names of all distributors who have not distributed only blue parts.

Question 25

Correct

Mark 1.00 out of
1.00

Flag question

Consider the following Query,

```
SELECT name, course_id FROM instructor, teaches WHERE instructor.ID= teaches.ID;
```

The above query can also be replaced with,

- Select name, course_id from instructor natural join teaches; 
- Select name, course_id from instructor;
- Select course_id from instructor join teaches;
- Select name, course_id from teaches,instructor where instructor.id=course.id;

Your answer is correct.

The correct answer is:

```
Select name, course_id from instructor natural join teaches;
```

Question **26**

Correct

Mark 1.00 out of
1.00

 Flag question

Functional dependencies are a generalization of

- Key dependencies
- Tuple dependencies
- Relation dependencies
- Database dependencies



Your answer is correct.

The correct answer is:

Key dependencies

Question **27**

Correct

Mark 1.00 out of
1.00

Flag question

Which one of the following refers to the "data about data"?

- Directory Data
- Relation Data
- Meta Data
- View Data



Your answer is correct.

The correct answer is:

Meta Data

Question **28**

Correct

Mark 1.00 out of
1.00

 Flag question

Consider the following incomplete query with blank space,

```
SELECT budget  
FROM department  
WHERE dept_name LIKE '_____ Science';
```

In the above-given incomplete Query, which of the following can be placed in the Query's blank space to select the "dept_name" that contains Science as its ending string?

- %
- \$
- _
- &



Your answer is correct.

The correct answer is:

%

Question **29**

Correct

Mark 1.00 out of
1.00

 Flag question

There are similarities between the instructor entity set and the secretary entity set in the sense that they have several attributes that are conceptually the same across the two entity sets: namely, the identifier, name, and salary attributes. This process is called

- Commonality
- Similarity
- Generalization
- Specialization



Your answer is correct.

The correct answer is:

Generalization

Question **30**

Correct

Mark 1.00 out of
1.00

 Flag question

A _____ on an attribute of a relation is a data structure that allows the database system to find those tuples in the relation that have a specified value for that attribute efficiently, without scanning through all the tuples of the relation.

- Constraint
- Assertion
- Index
- View



Your answer is correct.

The correct answer is:

Index

Question **31**

Incorrect

Mark 0.00 out of
1.00

Flag question

Which of the following is used to avoid cascading of authorizations from the user?

- Revoke select on department from Amit, Satoshi cascade;
- Granted by current role
- Revoke grant option for select on department from Amit;
- Revoke select on department from Amit, Satoshi restrict;



Your answer is incorrect.

The correct answer is:

Revoke select on department from Amit, Satoshi restrict;

Question **32**

Incorrect

Mark 0.00 out of
1.00

 Flag question

Which one is the guideline of Referential integrity in a relationship?

- Do not enter a value in the primary key field of the child table if that value does not exist in the primary key of the parent table ✖
- Do not enter a value in the foreign key field of a child table if that value does not exist in the primary key of the parent table
- Do not enter a value in the foreign key field of a parent table if that value does not exist in the primary key of the child table
- Do not enter a value in the foreign key field of a child table if that value does not exist in the foreign key of the parent table

Your answer is incorrect.

The correct answer is:

Do not enter a value in the foreign key field of a child table if that value does not exist in the primary key of the parent table

Question 33

Incorrect

Mark 0.00 out of
2.00 Flag question

Suppose a relation $r(a,b,c)$ is having the following instance.

a	b	c
1	4	2
1	5	3
1	6	3
3	2	2

Select the correct functional dependencies which are followed by the above instance.

- ac \rightarrow b and b \rightarrow c
- ac \rightarrow b and b \rightarrow a
- bc \rightarrow a and a \rightarrow c
- c \rightarrow a and ab \rightarrow c
- bc \rightarrow a and b \rightarrow c



Your answer is incorrect.

The correct answer is:

bc \rightarrow a and b \rightarrow c

Question 34

Incorrect

Mark 0.00 out of
2.00

 Flag question

Consider the following Commands,

I.) Rename

II.) Revoke

III.) Grant

IV.) Update

Which of the above-mentioned command is not the data definition language (DDL) command?

- IV only
- I and IV only
- I only
- II and III only
- II only
- III only



Your answer is incorrect.

The correct answer is:

IV only

Question **35**

Correct

Mark 2.00 out of
2.00

 Flag question

Suppose table Instructor has a salary column with not null constraint. The salary column is also unique. If the Instructor table has a total of 10 tuples then what will be the output of the following query?

Select Count(*) from Instructor
Where Salary > ANY (Select Salary from Instructor);

- 8
- 9
- 5
- 0
- 10



Your answer is correct.

The correct answer is:

9

Question **36**

Correct

Mark 1.00 out of
1.00

Flag question

Which of the following is a SQL aggregate function?

- All
- Left
- Outer
- Avg



Your answer is correct.

The correct answer is:

Avg

Question **37**

Correct

Mark 2.00 out of
2.00

 Flag question

If $\langle \text{comp} \rangle$ denotes all the comparison operators then what will be the correct definition of all clause?

- $F \langle \text{comp} \rangle \text{ all } r \Leftrightarrow \exists t \in r \text{ such that } (F \langle \text{comp} \rangle t)$ 
- $F \langle \text{comp} \rangle \text{ all } r \Leftrightarrow \exists t \in r \text{ such that } (t \langle \text{comp} \rangle r)$
- $F \langle \text{comp} \rangle \text{ all } r \Leftrightarrow \forall t \in r \text{ such that } (F \langle \text{comp} \rangle r)$
- $F \langle \text{comp} \rangle \text{ all } r \Leftrightarrow \forall t \in r \text{ such that } (t \langle \text{comp} \rangle r)$

Your answer is correct.

The correct answer is:

$F \langle \text{comp} \rangle \text{ all } r \Leftrightarrow \exists t \in r \text{ such that } (F \langle \text{comp} \rangle t)$

Question **38**

Incorrect

Mark 0.00 out of
1.00

 Flag question



An SQL command that lets you change the attribute definition of a relation is,

- Check
- Update
- Modify
- Insert

Your answer is incorrect.

The correct answer is:

Modify

Question **39**

Incorrect

Mark 0.00 out of
1.00

 Flag question

Which of the following SQL command is used to select only one copy of each set of duplicate rows?

- Select Top 1
- Select Unique
- Select Different
- Select Distinct
- All of the above



Your answer is incorrect.

The correct answer is:

Select Distinct

Question **40**

Correct

Mark 2.00 out of
2.00

 Flag question

If we have two relations *employee* (*name*, *salary*, *deptno*) and *department* (*deptno*, *deptname*, *address*) then select the query that cannot be expressed using the basic relational algebra operations (U, -, \times , π , σ , p)?

- The sum of all employees' salaries 
- Employees whose name is the same as their department name
- All employees of a given department
- Department address of every employee

Your answer is correct.

The correct answer is:

The sum of all employees' salaries

Question **41**

Correct

Mark 1.00 out of
1.00

 Flag question

Which one of the following refers to the copies of the same data (or information) occupying the memory space at multiple places.

- Data Repository
- Data Mining
- Data Redundancy
- Data Inconsistency



Your answer is correct.

The correct answer is:

Data Redundancy

Question **42**

Correct

Mark 6.00 out of
6.00

Flag question

Consider an instance of the relation with schema $X = (P, Q, R, S)$ is given. Consider the result x_1 and x_2 of the following query

$x_1 = \text{'select } P, Q, R \text{ from } X'$

$x_2 = \text{'select } P, S \text{ from } X'$

Let $A = x_1 \text{ natural join } x_2$

If the decomposition of X into x_1 and x_2 is lossy, then which of the following is Correct?

- X is subset of A
- A is subset of X
- $X \cup A = X$
- $X \text{ natural join } A = A$



Your answer is correct.

The correct answer is:

X is subset of A

Question 43

Correct

Mark 6.00 out of
6.00

Flag question

Let the relation Instructor(ID, name, department, salary) is given in which more than one instructors are associated with the physics department. Consider the following queries for finding the instructor IDs whose salary is higher than any instructor in the Physics department,

Q1 : Select I.ID
From Instructor I
Where Exists
(Select * From Instructor S where S.department = 'Physics' and
I.salary >=S.salary)

Q2 : Select I.ID
From Instructor I
Where I.salary > Any
(Select distinct salary From Instructor S Where S.department = "Physics")

Which one of the following statement is correct about these two queries?

- Both Q1 and Q2 are the correct query
- Only Q2 is the correct query
- Neither Q1 nor Q2 is the correct query
- Only Q1 is the correct query



Your answer is correct.

The correct answers are:

Both Q1 and Q2 are the correct query,

Neither Q1 nor Q2 is the correct query

Question 44

Correct

Mark 3.00 out
of 3.00

Flag question

Consider the below tables Emp1, Emp2 and Contact.

Table Emp1

Id	Name	Age
15	Shreya	24
12	Arun	60
99	Rohit	11

Table Emp2

Id	Name	Age
15	Shreya	24
25	Hari	40
98	Rohit	20
99	Rohit	11

Table Contact

Id	Phone	Area
10	2200	02
99	2100	01

If you run the below query, then how many tuples will be there in the final result?

```
SELECT Emp1.id
FROM   Emp1
WHERE  Emp1.age > ALL (SELECT Emp2.age
                        FROM   Emp2
                        WHERE  Emp2.name = "arun")
```

- 1
- 3
- 0
- 4

Your answer is correct.

The correct answer is:

3

Question 45

Correct

Mark 3.00 out of
3.00

Flag question

Consider a database table T containing two columns X and Y each of type integer. After the creation of the table, one record ($X=1, Y=1$) is inserted in the table. Let MX and MY denote the respective maximum values of X and Y among all records in the table at any point in time. Using MX and MY , new records are inserted in the table 128 times with X and Y values being $MX+1, 2*MY+1$ respectively. It may be noted that each time after the insertion, values of MX and MY change. What will be the output of the following SQL query after the steps mentioned above are carried out?

```
SELECT Y FROM T WHERE X=10;
```

- 255
- 1023
- 127
- 511



Your answer is correct.

The correct answer is:

1023

Question **46**

Incorrect

Mark 0.00 out of
2.00

 Flag question

Consider the relations are $X(P, Q, R)$ and $Y(Q, S, T)$. These relations hold the following functional dependencies,

$Q \rightarrow P$,

$P \rightarrow R$

If the relation X contains 100 tuples and Y contains 50 tuples then what will be the maximum number of possible tuples in the natural join of X and Y .

100

1500

50

10

150



Your answer is incorrect.

The correct answer is:

50

Question **47**

Incorrect

Mark 0.00 out of
1.00

Flag question

In the following Query, which of the following can be placed in the Query's blank portion to display the salary from highest to lowest amount, and sorting the employ's name alphabetically?

```
SELECT *  
FROM instructor  
ORDER BY salary _____, name _____;
```

- Asc, Desc
- Ascending, Descending
- Descending, Ascending
- Desc, Asc



Your answer is incorrect.

The correct answer is:

Desc, Asc

Question 48

Correct

Mark 2.00 out of
2.00

Flag question

If $\langle \text{comp} \rangle$ denotes all the comparison operators then what will be the correct definition of some clause?

- F $\langle \text{comp} \rangle$ some r $\Leftrightarrow \exists t \in \text{r} \text{ such that } (\text{F } \langle \text{comp} \rangle t)$
- F $\langle \text{comp} \rangle$ some r $\Leftrightarrow \exists t \in \text{r} \text{ such that } (t \langle \text{comp} \rangle r)$
- F $\langle \text{comp} \rangle$ some r $\Leftrightarrow \exists t \in \text{r} \text{ such that } (r \langle \text{comp} \rangle t)$
- F $\langle \text{comp} \rangle$ some r $\Leftrightarrow \exists t \in \text{r} \text{ such that } (\text{F } \langle \text{comp} \rangle r)$

Your answer is correct.

The correct answer is:

F $\langle \text{comp} \rangle$ some r $\Leftrightarrow \exists t \in \text{r} \text{ such that } (\text{F } \langle \text{comp} \rangle t)$

Question **49**

Incorrect

Mark 0.00 out of
2.00

 Flag question

Suppose a relation schema is given as $S(W, X, Y, Z)$. The functional dependencies over the schema is $W \rightarrow X$ and $Y \rightarrow Z$. If we decompose S into $A(W, X)$ and $B(Y, Z)$ then this decomposition is,

- Loss less join but not dependency preserving ✖
- Dependency preserving but not loss less join
- Not dependency preserving and not loss less join
- Dependency preserving and loss less join

Your answer is incorrect.

The correct answer is:

Dependency preserving but not loss less join

Question **50**

Incorrect

Mark 0.00 out of
2.00

 Flag question

What do you mean by one to many relationships from entity teacher to entity class?

- Many classes may relate with many teachers ✖
- One class may relate with one teacher
- Many teachers may relate with many classes
- Many teacher may relate with one classes

Your answer is incorrect.

The correct answer is:

One class may relate with one teacher

Question 51

Correct

Mark 1.00 out of
1.00

Flag question

The user defined data type can be created using

Create data

Create type

Create datatype

Create definetype



Your answer is correct.

The correct answer is:

Create type

Question **52**

Incorrect

Mark 0.00 out of
1.00

 Flag question

Which operator performs pattern matching in SQL

- BETWEEN Operator
- LIKE Operator
- EXISTS Operator
- IN Operator
- ALL Operator



Your answer is incorrect.

The correct answer is:

LIKE Operator

Question **53**

Incorrect

Mark 0.00 out of
1.00

 Flag question

Rows of a relation are known as the _____.



- Degree
- Schema
- Entity
- Tuples

Your answer is incorrect.

The correct answer is:

Tuples

Question **54**

Incorrect

Mark 0.00 out of
1.00

 Flag question

Department (dept name, building, budget) and Employee (employee_id, name, dept name, salary)

Here the dept_name attribute appears in both the relations. Here using common attributes in relation schema is one way of relating _____ relations.

- Tuple of common
- Attributes of common
- Attributes of distinct
- Tuple of distinct



Your answer is incorrect.

The correct answer is:

Tuple of distinct

Question **55**

What is the relation calculus?

Correct

Mark 1.00 out of
1.00

Flag question

- It is a high-level language
- It is Data Definition language
- It is a non-procedural language
- It is a kind of procedural language



Your answer is correct.

The correct answer is:

It is a non-procedural language

Question **56**

Incorrect

Mark 0.00 out of
1.00

 Flag question

The database management system can be considered as the collection of _____ that enables us to create and maintain the database.

- Programs
- Translators
- Relations
- Tables



Your answer is incorrect.

The correct answer is:

Programs

Question 5

Correct

Mark 1.00 out of
1.00

Flag question

Primary index should be defined as _____ whereas Secondary index should always be defined as _____.

- Dense, Sparse
- Dense as well as Sparse, Dense
- Sparse, Sparse
- None of these



Your answer is correct.

The correct answer is:

Dense as well as Sparse, Dense

Question 4

Incorrect

Mark 0.00 out of
1.00

Flag question

A non-clustering index needs to be defined on,

- Any set of attributes
- Primary key of relation
- Set of attributes having Unique key
- Search key of Sequential file



Your answer is incorrect.

The correct answer is:

Any set of attributes

Question 1

Incorrect

Mark 0.00 out of
1.00

Flag question

If the order of the B+ tree is 4, then how many maximum records in the relation can be pointed by the one leaf node?

- 5
- 3
- 4
- 2



Your answer is incorrect.

The correct answer is:

3

Question 3

Correct

Mark 1.00 out of
1.00

Flag question

Index files are usually stored in _____ organization.



- Sequential File
- Hash File
- Heap File
- Multitable Clustering File

Your answer is correct.

The correct answer is:

Sequential File

Question 2

Incorrect

Mark 0.00 out of
1.00

Flag question

B+ tree provides an efficient way to keep _____.

- Non clustering index
- Primary index
- Clustering index
- Actual records in the relation



Your answer is incorrect.

The correct answer is:

Non clustering index

Question 1

Correct

Mark 1.00 out of
1.00

 Flag question

The following are functions of a DBMS except _____. 

- Creating and processing forms
- Administrating Databases
- Creating Databases
- Processing Data

Your answer is correct.

The correct answer is:

Creating and processing forms

Question 2

Incorrect

Mark 0.00 out of
1.00

Flag question

In the relational schema, any many-to-one and one-to-many relationship sets that are total on the many-side can be represented by,

- Adding a null value to the "one" side which is not having association with many side ✗
- Adding an extra attribute to the "many" side, containing the primary key of the "one" side
- Adding a null value to the "many" side, which is not having association with one side
- Adding an extra attribute to the "one" side, containing the primary key of the "many" side

Your answer is incorrect.

The correct answer is:

Adding an extra attribute to the "many" side, containing the primary key of the "one" side

Question 3

Incorrect

Mark 0.00 out of
1.00

 Flag question

Data isolation in the file system is the result of,

- Adding the condition based on the user requirements
- Multiple files and formats
- Failure of the system
- Concurrent access by multiple users



Your answer is incorrect.

The correct answer is:

Multiple files and formats

Question 4

Incorrect

Mark 0.00 out of
1.00

Flag question

The purpose of the E-R diagram is to,

- Simplify Database Design
- Simplify Database Organization
- Simplify Database Access
- Simplify Database Programming



Your answer is incorrect.

The correct answer is:

Simplify Database Design

Question 5

Incorrect

Mark 0.00 out of
1.00

Flag question

If Database Administrator modify the structure of the data record then this modification do not affect other application is called as _____.

- Data Security
- Data Independance
- Data Isolation
- Data Integrity



Your answer is incorrect.

The correct answer is:

Data Independance

Question **6**

Correct

Mark 1.00 out of
1.00

 Flag question

Data dictionary is responsible for keeping the,

- Data about user
- Data about specific users
- Data about relation
- Data about data



Your answer is correct.

The correct answer is:

Data about data

Question 7

Incorrect

Mark 0.00 out of
1.00

 Flag question

A transaction is,

- a single operations that performs multiple logical function in a database application
- a collection of operations that performs a single logical function in a database application
- a collection of operations that performs multiple logical function in a database application
- a single operations that performs a single logical function in a database application



Your answer is incorrect.

The correct answer is:

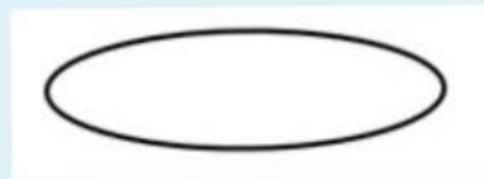
a collection of operations that performs a single logical function in a database application

Question 8

Correct

Mark 1.00 out of
1.00

Flag question



The following image is a symbol for _____.

- Weak Entity
- Relationship
- Attribute
- Entity



Your answer is correct.

The correct answer is:

Attribute

Question **9**

Correct

Mark 1.00 out of
1.00

 Flag question

Each entity is described by _____.

- Relationship
- Attribute
- Entity
- None of these



Your answer is correct.

The correct answer is:

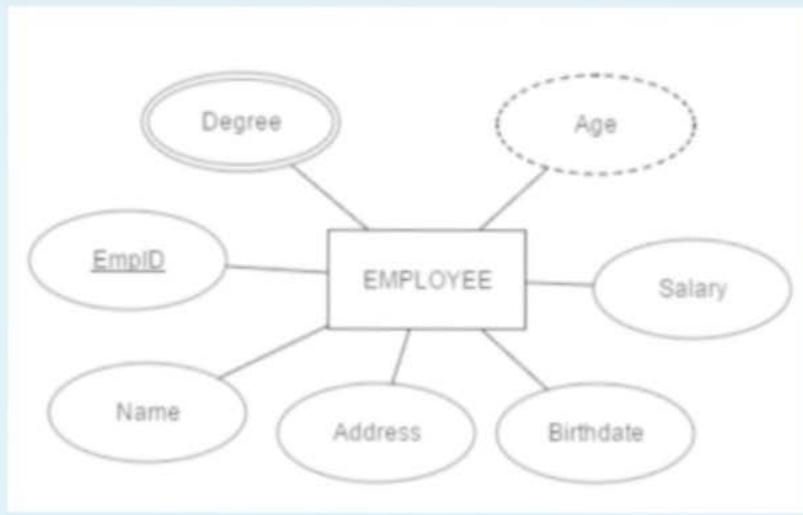
Attribute

Question 10

Correct

Mark 1.00 out of
1.00

Flag question



The following diagram is having the entity,

- Degree
- Employee
- Derived Birthdate
- EmpID



Your answer is correct.

The correct answer is:

Employee

Question **11**

Incorrect

Mark 0.00 out of
2.00

 Flag question

In an E-R diagram, If there is a directed double line ($=>$) from the relationship "advisor" to the entity set "instructor" and undirected single line from the relationship "advisor" to the entity set "student", then it denotes,

- An instructor can not be an advisor of more than one student and a student must have atleast one advisor
- A student can have more than one instructor as an advisor and the instructor must be an advisor of atleast one student
- A single student can not have more than one instructor as an advisor and the instructor must be an advisor of atleast one student
- An instructor can be an advisor of more than one student and a student must have atleast one advisor



Your answer is incorrect.

The correct answer is:

A single student can not have more than one instructor as an advisor and the instructor must be an advisor of atleast one student

Question **12**

Correct

Mark 1.00 out of
1.00

Flag question

Which is not a data model?

- Semantics data model
- Entity Relationship Model
- Hierarchical data model
- Semi-structured data model
- Relational model



Your answer is correct.

The correct answer is:

Semantics data model

Question **13**

Correct

Mark 1.00 out of
1.00

Flag question

What is Database Management System?

- A software system that enables users to create and access to the database.
- A software system that enables users to define, create, maintain and control access to the database. 
- A software system that enables users to maintain and control access to the database.
- A software system that enables users to access to the database.

Your answer is correct.

The correct answer is:

A software system that enables users to define, create, maintain and control access to the database.

Question **14**

Incorrect

Mark 0.00 out of
1.00

 Flag question

ER diagram creates a _____ of the database _____.

- physical structure, graphically ✖
- logical structure, graphically
- physical structure, numerically
- logical structure, numerically

Your answer is incorrect.

The correct answer is:

logical structure, graphically

Question **15**

Incorrect

Mark 0.00 out of
1.00

Flag question

Degree of a relationship

- is always two ✖
- is always one
- Number of participating entities in the relationship
- Number of descriptive attributes associated with the relationship

Your answer is incorrect.

The correct answer is:

Number of participating entities in the relationship

Question 16

Correct

Mark 1.00 out of
1.00

Flag question

An ERs purpose is to support a user's perception of the data and conceal the technical aspects associated with database design.

Select one:

 True False

The correct answer is 'True'.

Question 17

Incorrect

Mark 0.00 out of
1.00

Flag question

Logical database design describes base relations, file organizations, and indexes that are used to achieve efficient access to data.

Select one:

 True False

The correct answer is 'False'.

Question **18**

Correct

Mark 2.00 out of
2.00

 Flag question

If there is a directed line(->) from the relationship set "belongs_to" to the entity sets "account" and "customer". This indicates,

- An account cannot belong to more than one customer
- More than one account may belong to a single customer
- Each customer has at least one account
- Each account should have at least one customer



Your answer is correct.

The correct answer is:

An account cannot belong to more than one customer

Question 8

Incorrect

Mark 0.00 out of
1.00

 Flag question

Which of the following is not a valid SQL type?

- a. CHARACTER
- b. DECIMAL
- c. FLOAT
- d. NUMERIC



Your answer is incorrect.

The correct answer is:

DECIMAL

Question 5

Correct

Mark 1.00 out of
1.00

Flag question

_____ clause creates temporary relation for the query on which it is defined.

- FROM
- WHERE
- SELECT
- WITH



Your answer is correct.

The correct answer is:

WITH

Question 4

Correct

Mark 1.00 out of
1.00

Flag question

_____ command makes the updates performed by the transaction permanent in the database?

- Truncate
- Rollback
- Delete
- Commit



Your answer is correct.

The correct answer is:

Commit

Question 9

Correct

Mark 1.00 out of
1.00

Flag question

Which operator is used to compare a value to a specified list of values?

IN



ANY

ALL

BETWEEN

Your answer is correct.

The correct answers are:

IN,

ALL

Question 1

Correct

Mark 1.00 out of
1.00

Flag question

Which of the following is not Constraint in SQL?

- Union
- Primary Key
- Check
- Not Null



Your answer is correct.

The correct answer is:

Union

Question 7

Correct

Mark 1.00 out of
1.00

Flag question

Which of the following is true about the HAVING clause?

- Acts exactly like a WHERE clause.
- Similar to WHERE clause but is used for groups rather than rows. ✓
- Similar to WHERE clause but is used for rows rather than columns.
- Similar to the WHERE clause but is used for columns rather than groups.

Your answer is correct.

The correct answer is:

Similar to WHERE clause but is used for groups rather than rows.

Question 6

Correct

Mark 1.00 out of
1.00

Flag question

How many Primary keys can have in a table?

- Only 1
- Depends on DBA
- Depends on no of Columns
- Only 2



Your answer is correct.

The correct answer is:

Only 1

Question **10**

Incorrect

Mark 0.00 out of
1.00

 Flag question

Which of the following is true about the SQL AS clause?

- The SQL AS clause can only be used with the JOIN clause.
- The AS clause in SQL is used to defines a search condition.
- The AS clause in SQL is used to change the column name in the output or assign a name to a derived column.
- All of the mentioned



Your answer is incorrect.

The correct answer is:

The AS clause in SQL is used to change the column name in the output or assign a name to a derived column.

Question 3

Incorrect

Mark 0.00 out of
1.00

Flag question

Which type of JOIN is used to returns rows that do not have matching values?

- Equi Join
- Outer JOIN
- Natural JOIN
- Inner JOIN



Your answer is incorrect.

The correct answer is:

Outer JOIN

Question 2

Correct

Mark 1.00 out of
1.00

 Flag question

If we have not specified ASC or DESC after a SQL ORDER BY clause, the following is used by default

- ASC
- DESC
- There is no default value
- None of the mentioned



Your answer is correct.

The correct answer is:

ASC

Question 1

Correct

Mark 1.00 out of
1.00

Flag question

In tuple relational calculus $P1 \rightarrow P2$ is equivalent to

- $\neg P1 \wedge P2$
- $P1 \wedge \neg P2$
- $P1 \wedge P2$
- $\neg P1 \vee P2$



Your answer is correct.

The correct answer is:

$\neg P1 \vee P2$

Question 2

Correct

Mark 1.00 out of
1.00

Flag question

The expression $r - s$ represents a

- Arity
- Unity
- Projection
- Set-difference



Your answer is correct.

The correct answer is:

Set-difference

Question **3**

Incorrect

Mark 0.00 out of
2.00

Flag question

Which of the following tuple relational calculus expression(s) is/are equivalent to $\forall t \in r(P(t))$?

- I. $\neg \exists t \in r (P(t))$
- II. $\exists t \notin r(P(t))$
- III. $\neg \exists t \in r(\neg P(t))$
- IV. $\exists t \notin r(\neg P(t))$

- I only
- III only X
- II only
- III and IV only

Your answer is incorrect.

The correct answer is:

III and IV only

Question 4

Correct

Mark 1.00 out of
1.00

Flag question

A set of possible data values is called?

- Degree
- Tuple
- Domain
- Attribute



Your answer is correct.

The correct answer is:

Domain

Question 5

Incorrect

Mark 0.00 out of
1.00

Flag question

Which of the following relational algebra operations require two relations as input with exactly the same attributes?

- Update, insert, delete
- Project, restriction, union
- Union, intersection, set difference
- Join, cartesian product (multiplication), set difference



Your answer is incorrect.

The correct answer is:

Union, intersection, set difference

Question **6**

Correct

Mark 1.00 out of
1.00

 Flag question

The types of quantifiers are

- Universal quantifier
- Both Universal and Local
- Both Local and Existential
- Local quantifier
- Both Universal and Existential
- Existential quantifier



Your answer is correct.

The correct answer is:

Both Universal and Existential

Question 7

Correct

Mark 1.00 out of
1.00

Flag question

Consider the natural join of a relation R with a relation S. If R has m tuples and S has n tuples. Then the maximum and minimum size of the join respectively are :

- mn and m+n
- m+n and 0
- mn and 0
- m+n and [m-n]



Your answer is correct.

The correct answer is:

mn and 0

Question 8

Correct

Mark 2.00 out of
2.00

Flag question

The relation **studInfo**(studId, name, sex) keeps the information about the students. The relation **enroll**(studId, courseld) gives which student has enrolled for (or taken) what course(s). Assume that every course is taken by at least one male and at least one female student. What does the following relational algebra expression represent?

$$\prod_{courseld}((\prod_{studId}(\sigma_{sex="female"}(studInfo)) \times \prod_{courseld}(enroll)) - enroll)$$

- None of the mentioned
- Courses in which only male students are enrolled.
- Courses in which a proper subset of female students are enrolled.
- Courses in which all the female students are enrolled.



Your answer is correct.

The correct answer is:

Courses in which a proper subset of female students are enrolled.

Question 9

Correct

Mark 1.00 out of
1.00

Flag question

"Find all students who have taken all courses offered in the Biology department." The expressions that match this sentence is?

- $\forall t \in r (Q(t))$
- $\neg t \in r (Q(t))$
- $\exists t \in r (Q(t))$
- $\sim t \in r (Q(t))$



Your answer is correct.

The correct answer is:

$\forall t \in r (Q(t))$

Question **10**

Incorrect

Mark 0.00 out of
1.00

Flag question

Given the following instance of a relation A,

A

Name Age Address Dept

c	23	Delhi	CS
b	43	Mumbai	EE
c	34	Agra	X
a	56	Rajkot	ECE
b	24	Delhi	CS

For **(Name,Dept)** to be a key for this instance, the value X should NOT be equal to null



The correct answer is: CS

Question 11

Incorrect

Mark 0.00 out
of 3.00[Flag question](#)

Consider the following relations,

manage**name manage**

'A'	'E'
'B'	'C'
'C'	'G'
'D'	'E'
'F'	'E'
'E'	'G'

Emp**name street city**

'A'	'X'	1
'B'	'Y'	2
'C'	'Z'	3
'D'	'X'	1
'E'	'X'	4
'F'	'Y'	2
'G'	'Z'	3

 $\Pi_{\text{manage.name}} (\sigma_{\text{emp1.city} = \text{emp2.city} \wedge \text{manage.manage} = \text{emp2.name}} ((\sigma_{\text{emp1.name} = \text{manage.name}} (\rho_{\text{emp1}}(\text{emp}) \times \text{manage})) \times \rho_{\text{emp2}}(\text{emp})))$

Output of the above query will include the following names,

- A only
- C only
- A, C only
- A, D only
- A, C, D only

Your answer is incorrect.

The correct answer is:

C only

Question **12**

Correct

Mark 1.00 out of
1.00

Flag question

In a selection statement, the predicate appears as a subscript to

- epsilon
- delta
- sigma
- zeta



Your answer is correct.

The correct answer is:
sigma

Question **13**

Correct

Mark 1.00 out of
1.00

Flag question

A special case of multisets, which have only one copy of each element, is known to be

- Aggregator
- Associator
- Sets
- Elements



Your answer is correct.

The correct answer is:

Sets

Question 14

Incorrect

Mark 0.00 out of
2.00

Flag question

Consider the following relation

employee**empId empName empAge**

1	'AB'	25
2	'CD'	23
3	'EF'	31
4	'QW'	27
5	'BD'	30
6	'AD'	32
7	'EQ'	26

$$\pi_{d2.empId} (\sigma_{d1.empAge > d2.empAge} (p_{d1} \text{ employee} \times p_{d2} \text{ employee}))$$

How many rows will be there in the output of the above query?

- 3
- 6
- 4
- 7
- 5

Your answer is incorrect.

The correct answer is:

6

Question 15

incorrect

Mark 0.00 out
of 4.00

Flag question

Consider the following relations

employee**empId empName empAge**

1	'AB'	25
2	'CD'	23
3	'EF'	31
4	'QW'	27
5	'BD'	30
6	'AD'	32
7	'EQ'	26

dependent**depId eId depName depAge**

1	1	'ab'	29
2	1	'bd'	12
3	2	'eq'	15
4	3	'qr'	33
5	3	'tr'	30
6	4	'rt'	13
7	6	'we'	36
8	7	'ut'	35

$$\pi_{\text{empId}} (\sigma_{\text{empId} = \text{eId}} (\text{employee} \times \rho_A (\pi_{\text{depId}, \text{eId}, \text{depName}, \text{depAge}} (\text{dependent}) - \pi_{\text{d1.depId}, \text{d1.eId}, \text{d1.depName}, \text{d1.depAge}} (\sigma_{\text{d1.depAge} > \text{d2.depAge}} (\rho_{d1} \text{ dependent} \times \rho_{d2} \text{ dependent})))))$$

The above query will give the following employee ids.

- 1, 2
- 3
- 1
- 2
- 2, 4

Your answer is incorrect.

The correct answer is:

Question **16**

Correct

Mark 1.00 out of
1.00

Flag question

The operators in SELECT operation statement such as 'and' , 'or' and 'not' are classified as

- tuple operators
- string operators
- Boolean operators
- insertion operators



Your answer is correct.

The correct answer is:

Boolean operators

Question **17**

Correct

Mark 1.00 out of
1.00

 Flag question

A relation basically is by definition a subset of a

- Selection
- Cartesian product
- Projection
- Union



Your answer is correct.

The correct answer is:

Cartesian product

Question **18**

Correct

Mark 1.00 out of
1.00

 Flag question

If E1 and E2 are relational algebra expressions, then which of the following is NOT a relational algebra expression?

- E1 \cup E2
- E1 - E2
- E1 / E2
- E1 \times E2



Your answer is correct.

The correct answer is:

E1 / E2

Question 19

Incorrect

Mark 0.00 out of
2.00

Flag question

Consider the following relation,

R**Name Number**

Amit 2

Akash 4

Arif 3

Akhil 5

 $\pi_{r1.Number, r2.Name} (\sigma_{r1.Number < r2.Number} ((\rho_{r1}(R)) \times (\rho_{r2}(R))))$

The output of the above query will include the following names,

- Only Akhil
- Akash and Arif
- Only Amit
- Akash, Arif, Akhil
- Amit, Akash, Arif

Your answer is incorrect.

The correct answer is:

Akash, Arif, Akhil

Question **20**

Incorrect

Mark 0.00 out of
2.00

 Flag question

The tuple relational calculus for the query "Find ProductId, ProductName, Price and Quantity for the products whose price is greater than 700/- Rs" is as follows,

$\{t \mid t \in \text{Products} \wedge t[\text{Price}] > 700\}$

Which of the following statement can be inferred from the above-given tuple relational calculus.

- Products has the schema (ProductId, ProductName, Price) ✖
- Given tuple relational calculus is unsafe
- None of these
- Products relation has more than 700 tuples

Your answer is incorrect.

The correct answer is:

None of these

Question 21

Incorrect

Mark 0.00 out
of 3.00

Consider the following relations,

manage**name manage**

'A' 'E'
'B' 'C'
'C' 'G'
'D' 'E'
'F' 'E'
'E' 'G'

Emp**name street city**

'A' 'X' 1
'B' 'Y' 2
'C' 'z' 3
'D' 'X' 1
'E' 'X' 4
'F' 'Y' 2
'G' 'z' 3

 $\Pi_{emp1.name} (\sigma_{manage.manage=emp2.name \wedge emp1.street = emp2.street} ((\sigma_{emp1.name = manage.name} (p_{emp1}(emp) \times manage)) \times p_{emp2}(emp)))$

Output of the above query will include the following names,

- C only
- A, B, D, E, F only
- A, B, D, G only
- A, C, D only
- B, F, C only

Your answer is incorrect.

The correct answer is:

A, C, D only

Question **22**

Incorrect

Mark 0.00 out of
1.00

Flag question

An expression in the domain relational calculus is of the form?

- {P(x₁, x₂, ..., x_n) | <x₁, x₂, ..., x_n> }
- {<x₁, x₂, ..., x_n> | P(x₁, x₂, ..., x_n)}
- {x₁, x₂, ..., x_n | x₁, x₂, ..., x_n}
- {x₁, x₂, ..., x_n | <x₁, x₂, ..., x_n> }

x

Your answer is incorrect.

The correct answer is:

{<x₁, x₂, ..., x_n> | P(x₁, x₂, ..., x_n)}

Question **23**

Correct

Mark 1.00 out of
1.00

 Flag question

Consider two tuples A and B, the operation whose result includes tuples that are included in both relations is classified as

- square of relation A and B
- intersection of relation A and B
- difference of relation A and B
- union of relation A and B



Your answer is correct.

The correct answer is:

intersection of relation A and B

Question **24**

Correct

Mark 1.00 out of
1.00

 Flag question

The _____ operation allows us to find tuples that are in one relation but are not in another.

- Union
- Difference
- Set-difference
- Intersection



Your answer is correct.

The correct answer is:

Set-difference

Question **25**

Correct

Mark 1.00 out of
1.00

 Flag question

The tuple relational calculus language is of type

- Processed
- Structure
- Formal
- Nonprocedural



Your answer is correct.

The correct answer is:

Nonprocedural



μTorrent

Question **26**

Incorrect

Mark 0.00 out of
1.00

Flag question

Consider two tuples B and C, the operation whose result includes tuples that are included in both relations or either in B or C is classified as

- difference of relation B and C
- union of relation B and C
- square of relation B and C
- intersection of relation B and C



Your answer is incorrect.

The correct answer is:

union of relation B and C

Question **27**

Incorrect

Mark 0.00 out of
1.00

Flag question

Relational calculus is :

- I. equivalent to relational algebra in its capabilities.
- II. it is stronger than relational algebra.
- III. it is weaker than relational algebra.
- IV. it is based on predicate calculus of formal logic.

Now answer which one is the correct option?

- (III) and (IV) are true
- (I) and (IV) are true ✖
- only (III) is true
- (II) and (IV) are true

Your answer is incorrect.

The correct answer is:

(III) and (IV) are true

Question 28

Correct

Mark 3.00 out
of 3.00

Flag question

Consider the following relations

employee**empId empName empAge**

1	'AB'	25
2	'CD'	23
3	'EF'	31
4	'QW'	27
5	'BD'	30
6	'AD'	32
7	'EQ'	26

dependent**depId eid depName depAge**

1	1	'ab'	29
2	1	'bd'	12
3	2	'eq'	15
4	3	'qr'	33
5	3	'tr'	30
6	4	'rt'	13
7	6	'we'	36
8	7	'ut'	35

 $\pi_{\text{empId}}(\text{employee}) - \pi_{\text{empId}}(\sigma_{\text{employee.empId} = \text{dependent.eid} \wedge \text{employee.empAge} < \text{depAge}}(\text{employee} \times \text{dependent}))$

The above query will give the following employee ids.

- 6, 7
- 2, 3, 4
- 2, 4, 5
- 1, 4, 6
- 1, 3, 5

Your answer is correct.

The correct answer is:

2, 4, 5

Question 29

Incorrect

Mark 0.00 out
of 2.00

Flag question

If we apply the following relational algebra query in the given relation A. Then, how many tuples will be there in the answer.

$$\pi_{A1.col1}(\sigma_{A1.col2 > A2.col2}(p_{A1} A \times p_{A2} A))$$

A	
A.col1	A.col2
'a'	4
'r'	7
'e'	9
'q'	10
'u'	5
'w'	8
'u'	2

- 5
- 6
- 4
- 8
- 7

Your answer is incorrect.

The correct answer is:

Question **30**

Correct

Mark 1.00 out of
1.00

Flag question

The _____ operator takes the results of two queries and returns only rows that appear in both result sets.

- Union
- Projection
- Difference
- Intersect



Your answer is correct.

The correct answer is:

Intersect

Question 31

Incorrect

Mark 0.00 out of
2.00

Flag question

Let R and S be two relations with the following schema

R (P,Q,R1,R2,R3)

S (P,Q,S1,S2)

Where {P, Q} is the key for both schemas. Which of the following queries are equivalent?

- I. $\prod_P (R \bowtie S)$
- II. $\prod_P (R) \bowtie \prod_P (S)$
- III. $\prod_P (\prod_{P,Q} (R) \cap \prod_{P,Q} (S))$
- IV. $\prod_P (\prod_{P,Q} (R) - (\prod_{P,Q} (R) - \prod_{P,Q} (S)))$

 II, III and IV only I, III and IV only I, II and III only I and III only III and IV only

Your answer is incorrect.

The correct answer is:

I, III and IV only

Question **32**

Correct

Mark 1.00 out of
1.00

Flag question

The branch of calculus which is based on mathematical logic is classified as

- local calculus
- predicate calculus
- indicate calculus
- universal calculus



Your answer is correct.

The correct answer is:
predicate calculus

Question 33

Incorrect

Mark 0.00 out
of 4.00[Flag question](#)

Consider the following relations,

manage**name manage**'A' 'E'
'B' 'C'
'C' 'G'
'D' 'E'
'F' 'E'
'E' 'G'**Emp****name street city**'A' 'X' 1
'B' 'Y' 2
'C' 'Z' 3
'D' 'X' 1
'E' 'X' 4
'F' 'Y' 2
'G' 'Z' 3 $\Pi_{\text{manage.manage}} (\sigma_{\text{manage.manage} = \text{emp2.name}} ((\sigma_{\text{emp1.name} \neq \text{emp2.name} \wedge \text{emp1.street} \neq \text{emp2.street} \wedge \text{emp1.city} = \text{emp2.city}} (\rho_{\text{emp1}}(\text{emp}) \times \rho_{\text{emp2}}(\text{emp}))) \times \text{manage}))$

How many tuples will be there in the output of the above query?

- 3
- 4
- 2
- None of the mentioned
- 1

Your answer is incorrect.

The correct answer is:

Question **34**

Incorrect

Mark 0.00 out of
1.00

 Flag question

An ER model of a database consists of entity types A and B. These are connected by a relationship R which does not have its own attribute. Under which one of the following conditions, can the relational table for R be merged with that of A?

- Relationship R is many-to-one from B to A and the participation of A in R is partial.
- Relationship R is one-to-many from B to A and the participation of A in R is partial.
- Relationship R is one-to-many from B to A and the participation of A in R is total.
- Relationship R is many-to-one from B to A and the participation of A in R is total. ✖

Your answer is incorrect.

The correct answer is:

Relationship R is one-to-many from B to A and the participation of A in R is total.

Question 35

Incorrect

Mark 0.00 out
of 3.00

Flag question

Consider the following relations,

manage**name manage**

'A'	'E'
'B'	'C'
'C'	'G'
'D'	'E'
'F'	'E'
'E'	'G'

Emp**name street city**

'A'	'x'	1
'B'	'y'	2
'C'	'z'	3
'D'	'x'	1
'E'	'x'	4
'F'	'y'	2
'G'	'z'	3

$$\sigma_{\text{manage.manage} = \text{emp2.name}} (\{\sigma_{\text{emp1.name} = \text{manage.name}} (\rho_{\text{emp1}}(\text{emp}) \times \text{manage})\} \times \rho_{\text{emp2}}(\text{emp}))$$

How many tuples will be there in the output of the above query?

- 5
- None of the mentioned
- 7
- 4
- 6

Your answer is incorrect.

The correct answer is: 4

Question **36**

Which one of the following is a procedural language?

Correct

Mark 1.00 out of
1.00

Flag question

- Domain relational calculus
- Tuple relational calculus
- Query language
- Relational algebra



Your answer is correct.

The correct answer is:

Relational algebra

Question **37**

Incorrect

Mark 0.00 out of
1.00

 Flag question

Given the basic ER and relational models, which of the following is INCORRECT?

- An attribute of an entity can have more than one value X
- An attribute of an entity can be composite
- In a row of a relational table, an attribute can have more than one value
- In a row of a relational table, an attribute can have exactly one value or a NULL value

Your answer is incorrect.

The correct answer is:

In a row of a relational table, an attribute can have more than one value

Question **38**

Correct

Mark 1.00 out of
1.00

Flag question

A tuple-relational-calculus expression may generate a/an

- Composite relation
- Invalid relation
- Finite relation
- Infinite relation



Your answer is correct.

The correct answer is:

Infinite relation

Question **39**

Correct

Mark 2.00 out of
2.00

 Flag question

Select the relational algebra expression which matches with the relational algebra expression $\pi_{A1}(\pi_{A2}(\sigma_{F1}(\sigma_{F2}(r))))$, where $A1, A2$ are sets of attributes in r with $A1 \subset A2$ and $F1, F2$ are Boolean expressions based on the attributes in r ?

$\pi_{A2}(\sigma_{(F1 \vee F2)}(r))$

$\pi_{A1}(\sigma_{(F1 \wedge F2)}(r))$ 

$\pi_{A1}(\sigma_{(F1 \vee F2)}(r))$

$\pi_{A2}(\sigma_{(F1 \wedge F2)}(r))$

Your answer is correct.

The correct answer is:

$\pi_{A1}(\sigma_{(F1 \wedge F2)}(r))$

Question **40**

Incorrect

Mark 0.00 out of
1.00

Flag question

A query expression in the tuple relational calculus is done as

- {p| P(t)}
- {p| t(t)}
- {t| P(t)}
- {p| t(p)}



Your answer is incorrect.

The correct answer is:

{t| P(t)}

Question 41

Incorrect

Mark 0.00 out
of 4.00

Flag question

Consider the following relations

employee**empId empName empAge**

1	'AB'	25
2	'CD'	23
3	'EF'	31
4	'QW'	27
5	'BD'	30
6	'AD'	32
7	'EQ'	26

dependent**depId eId depName depAge**

1	1	'ab'	29
2	1	'bd'	12
3	2	'eq'	15
4	3	'qr'	33
5	3	'tr'	30
6	4	'rt'	13
7	6	'we'	36
8	7	'ut'	35

 $\Pi_{\text{depId}, \text{eId}, \text{depName}, \text{depAge}} (\text{dependent}) - \Pi_{\text{d1.depId}, \text{d1.eId}, \text{d1.depName}, \text{d1.depAge}, \text{d2.depAge}} (\sigma_{\text{d1.depAge} > \text{d2.depAge}} (p_{\text{d1 dependent}} \times p_{\text{d2 dependent}}))$

How many number of tuples will be there in the output of the above query?

- 4
- 2
- 1
- 3
- 5

Your answer is incorrect.

The correct answer is:

1

Question 42

Incorrect

Mark 0.00 out of
2.00

Flag question

Consider a database that has the relation schemas EMP (Empld, EmpName, DeptId), and DEPT (DeptName, DeptId). Note that the DeptId can be permitted to be NULL in the relation EMP. Consider the following queries on the database expressed in tuple relational calculus.

- (I) $\{t | \exists u \in \text{EMP} (t[\text{EmpName}] = u[\text{EmpName}] \vee \forall v \in \text{DEPT} (t[\text{DeptId}] \neq v[\text{DeptId}]))\}$
- (II) $\{t | \exists u \in \text{EMP} (t[\text{EmpName}] = u[\text{EmpName}] \wedge \exists v \in \text{DEPT} (t[\text{DeptId}] \neq v[\text{DeptId}]))\}$
- (III) $\{t | \exists u \in \text{EMP} (t[\text{EmpName}] = u[\text{EmpName}] \wedge \exists v \in \text{DEPT} (t[\text{DeptId}] = v[\text{DeptId}]))\}$

Which of the above queries are unsafe?

- I and III only
- II and III only ✖
- None of these
- I and II only
- I only

- I, II and III

Your answer is incorrect.

The correct answer is:

I only

Question **43**

Correct

Mark 1.00 out of
1.00

Flag question

The predicate of a selection statement may include comparisons between

- Multiple attributes
- Two attributes
- Multiple relations
- Two relations



Your answer is correct.

The correct answer is:

Two attributes

Question 44

Correct

Mark 1.00 out of
1.00

Flag question

Suppose (A, B) and (C,D) are two relation schemas. Let r1 and r2 be the corresponding relation instances. B is a foreign key that refers to C in r2. If data in r1 and r2 satisfy referential integrity constraints, which of the following is ALWAYS TRUE?

- (A) $\Pi_B(r_1) - \Pi_C(r_2) = \emptyset$
- (B) $\Pi_C(r_2) - \Pi_B(r_1) = \emptyset$
- (C) $\Pi_B(r_1) = \Pi_C(r_2)$
- (D) $\Pi_B(r_1) - \Pi_C(r_2) \neq \emptyset$

- D
- B
- C
- A and C both
- A



Your answer is correct.

The correct answer is: A

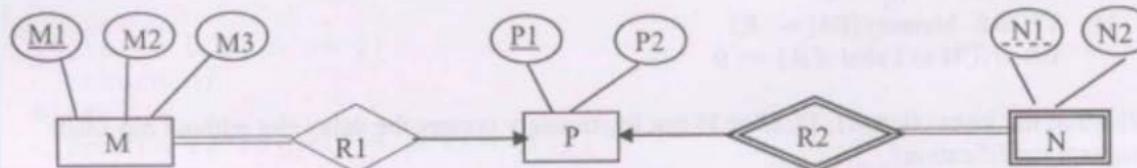
Question **45**

Correct

Mark 1.00 out of
1.00

Flag question

Consider the following ER diagram



The minimum number of tables needed to represent M, N, P, R1, R2 is

- 4
- 3
- 2
- 5



Your answer is correct.

The correct answer is:

2

Question **46**

Incorrect

Mark 0.00 out of
1.00

 Flag question

Which is a unary operation:

- a. Selection operation
- b. Projection operation
- c. Generalized selection
- d. Primitive operation



Your answer is incorrect.

The correct answer is:

Generalized selection

Question **47**

Incorrect

Mark 0.00 out of
1.00

 Flag question

A query that involves a Cartesian product includes a

- Set-intersection operation
- Union operation
- Projection operation
- Selection operation



Your answer is incorrect.

The correct answer is:

Selection operation

Question **48**

Correct

Mark 1.00 out of
1.00

Flag question

The operation of a relation X, produces Y, such that Y contains only selected attributes of X. Such an operation is :

- Union
- Intersection
- Projection
- Difference



Your answer is correct.

The correct answer is:

Projection

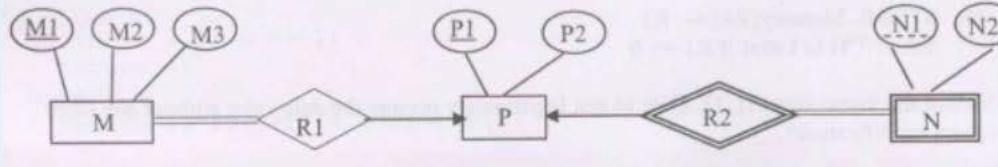
Question **49**

Not answered

Marked out of
1.00

Flag question

Consider the following ER diagram



Which one of the following is a correct attribute set in one of the tables for minimizing the required number of tables.

- {M1, P1}
- {M1,P1,N1,N2}
- {M1,M2,M3, P1}
- {M1, P1, N1}

Your answer is incorrect.

The correct answer is:

{M1,M2,M3, P1}

Question 50

Not answered

Marked out of
2.00

 Flag question

Consider the following relation,

R

Name Number

Amit 2

Akash 4

Arif 3

Akhil 5

$\pi_{r1.Number, r2.Name} (\sigma_{r1.Number > r2.Number} ((\rho_{r1}(R)) \times (\rho_{r2}(R))))$

In the output of the above query the missing numbers are,

- Number 4 and 5 only
- Number 3 only
- Number 2 only
- Number 2 and 3 only
- Number 5 only

Your answer is incorrect.

The correct answer is:

Number 2 only

Question **51**

Not answered

Marked out of
1.00

 Flag question

The most commonly used operation in relational algebra for projecting a set of tuple from a relation is

- Union
- Join
- Select
- Projection

Your answer is incorrect.

The correct answer is:

Select

Question 52

Not answered

Marked out of

2.00

Flag question

Let the following relation schemas be given: $R = (A, B, C)$. Let relations $r(R)$ also be given. Which of the following expressions are equivalent.

- I.) $\Pi_A(r)$
- II.) $\{t \mid \exists q \in r (q[A] = t[A])\}$
- III.) $\{\langle t \rangle \mid \exists p, q (\langle t, p, q \rangle \in r)\}$
- IV.) $\{t \mid \exists p \in r \exists q \in r (t[A] = p[A] \wedge t[B] = p[B] \wedge t[C] = p[C] \wedge t[D] = q[A])\}$

- II and III only
- I, II and III only
- II, III and IV only
- I and II only
- I III, IV only

Your answer is incorrect.

The correct answer is:

I, II and III only

Started on Friday, 6 May 2022, 10:20 AM

State Finished

Completed on Friday, 6 May 2022, 10:25 AM

Time taken 4 mins 51 secs

Marks 3.00/5.00

Grade **6.00** out of 10.00 (**60%**)

Question **1**

Correct

Mark 1.00 out of 1.00

Given the following statements:

- S1.) If the records are physically stored in the same order as the order of search key of the index then it is a clustering index
- S2.) The data record of the file are organized in the same order as the data entries of the index, then it is a clustering index
- S3.) If the search key of the index is primary key of the data records, then it is a clustering index
- S4.) Index whose search key specifies an order same as sequential order of the file is clustering index.

Which are the correct statements,

Select one:

- S1, S2 and S3 only
- S4, S1 and S2 only ✓
- S3 and S4 only
- S1, S2, S3 and S4

Question 2

Incorrect

Mark 0.00 out of 1.00

If the record type allows variable length for one or more fields then the Variable-length records arises in the database. So if we have Instructor record with the following type,

Instructor(ID varchar(10), name varchar(20), dept_name varchar(20), salary numeric(8,2))

Then, how much bytes the null bitmap require for the record representation of Instructor.

Select one:

- 4
- 1
- 2
- 5

**Question 3**

Correct

Mark 1.00 out of 1.00

A relation schema S is having the attributes as follows,

S=(G, H, I, J, K, L)

The relation schema S holds the following functional dependencies,

HJ -> J, G -> H, K -> I, J -> G

Which one is the possible set of candidate keys,

Select one:

- a. {GKL, HKL, HIL}
- b. {GK, HK, JK}
- c. {GKL, HKL, JKL}
- d. {GK, HK}



Question 4

Correct

Mark 1.00 out of 1.00

The data structure ideal for look up in the range scan operations is,

Select one:

- a. Link List
- b. Hash Table
- c. B + Tree ✓
- d. Heap

Question 5

Incorrect

Mark 0.00 out of 1.00

The following schedules are given involving two transactions.

S1:R₂[x] R₂[y] R₁[x] W₁[x] W₁[y] W₂[y]

S2:R₁[x] W₁[x] R₂[x] W₁[y] R₂[y] W₂[y]

Which one of the following statement is true?

Select one:

- None
- Only S2 is conflict serializable
- Both S1 and S2 are conflict serializable
- Only S1 is conflict serializable ✗

[◀ Section-2 Quiz4 \(29 April 2022\)](#)[Quiz 1 ►](#)

[Dashboard](#) / My courses / [CS204](#) / [General](#) / [Quiz3 \(Section 2\)](#)

Started on Thursday, 21 April 2022, 9:55 AM

State Finished

Completed on Thursday, 21 April 2022, 10:00 AM

Time taken 5 mins

Question 1

Incorrect

Marked out of 1.00

The database management system can be considered as the collection of _____ that enables us to create and maintain the database.

- Tables
- Programs
- Relations
- Translators



Question 2

Incorrect

Marked out of 1.00

Functional dependencies are a generalization of

- Key dependencies
- Tuple dependencies
- Database dependencies
- Relation dependencies



Question 3

Incorrect

Marked out of 1.00

A non-clustering index needs to be defined on,

- Set of attributes having Unique key
- Search key of Sequential file ✖
- Any set of attributes
- Primary key of relation

Question 4

Incorrect

Marked out of 1.00

Index files are usually stored in _____ organization.

- Sequential File
- Heap File
- Multitable Clustering File
- Hash File ✖

Question 5

Incorrect

Marked out of 1.00

Primary index should be defined as _____ whereas Secondary index should always be defined as _____.

- Dense, Sparse ✖
- Sparse, Sparse
- None of these
- Dense as well as Sparse, Dense

[◀ Mid Semester Online Part 2 \(8 March 2022\)](#)[Jump to...](#)[Section-2 Quiz4 \(29 April 2022\) ►](#)

Started on Friday, 29 April 2022, 11:00 AM

State Finished

Completed on Friday, 29 April 2022, 11:10 AM

Time taken 10 mins

Question **1**

Correct

Marked out of 2.00

In the fixed length record file, sometimes we keep the header at the beginning of the file. The key information that header keeps is,

- I.) The address of the first record whose contents are deleted
- II.) The array of addresses of all the records in the file
- III.) The array of addresses and size of all the records in the file
- IV.) The offset and length for different attributes in the record

- II and III Only
- I, II and III Only
- I and II Only
- II Only
- IV Only
- I Only



Question **2**

Correct

Marked out of 1.00

_____ is the time from when a read or write request is issued to when data transfer begins.

- Average seek time
- Access time
- Rotational latency time
- Seek time



Question 3

Correct

Marked out of 1.00

Which RAID level gives block level striping with single distributed parity?

- RAID 2
- RAID 6
- RAID 5
- RAID 1

**Question 4**

Correct

Marked out of 1.00

The disk controller uses _____ at each sector to ensure that the data is not corrupted on data retrieval.

- ECC
- Parity
- Checksum
- ErrorCode

**Question 5**

Incorrect

Marked out of 1.00

Variable length record arise in database system file due to storage of multiple record types in a file. Here multiple record type means,

- Records having multiple attributes
- Records from different relations
- Records having attributes of multiple types
- Records with variable length attributes



Question 6

Incorrect

Marked out of 1.00

To have a file hold a list, it is necessary to

- Identify the name, width and type of the fields of each record. ✖
- Identify the records in the list
- All of the mentioned
- Decide which fields will be used as sort or index keys

Question 7

Incorrect

Marked out of 1.00

The time for repositioning the arm is called the _____ and it increases with the distance that the arm must move.

- Access time
- Seek time
- Rotational latency time
- Average seek time ✖

Question 8

Incorrect

Marked out of 2.00

For keeping the variable length records in the block, the slotted page structure is commonly used. There is a header at the beginning of each block, containing the following information:

- I.) The number of record entries in the header
- II.) The end of free space in the block
- III.) An array whose entries contain the location and size of each record.

If a record is deleted then, which of the above information will change

- I and III only
- II and III only
- I and II only ✖
- I, II and III only

Question 9

Incorrect

Marked out of 2.00

Which of the following problems need to be solved by the technique for implementing variable-length record.

I.) How to represent a single record in such a way that individual attribute can be extracted easily

II.) How to follow the sequence of the record in the file

III.) How to fetch the record from the Buffer

- II and III both
- I only
- I and II both
- II only

**Question 10**

Incorrect

Marked out of 1.00

Disk I/O operation is performed in units of,

- One file
- One record
- One sector
- One block

**Question 11**

Correct

Marked out of 1.00

A measure that computes the reliability of the disk is called,

- Mean time to access
- Mean time to result
- Mean time to success
- Mean time to failure



Question 12

Incorrect

Marked out of 1.00

If you want to read the records from two different relations using a single I/O operation, which file organization will you prefer?

- Sequential File organization
- Heap File organization
- Hash File Organization
- Clustering File Organization

✖

[◀ Quiz3 \(Section 2\)](#)

Jump to...

[Quiz5_Section2 \(6th May 2022\) ►](#)

[Dashboard](#) / My courses / [CS204](#) / [General](#) / [Section-2 Quiz4 \(29 April 2022\)](#)

Started on Friday, 29 April 2022, 11:00 AM

State Finished

Completed on Friday, 29 April 2022, 11:09 AM

Time taken 9 mins 11 secs

Question 1

Incorrect

Marked out of 1.00

The time for repositioning the arm is called the _____ and it increases with the distance that the arm must move.

- Seek time
- Average seek time ✖
- Rotational latency time
- Access time

Question 2

Incorrect

Marked out of 1.00

Which RAID level gives block level striping with single distributed parity?

- RAID 2 ✖
- RAID 6
- RAID 1
- RAID 5

Question 3

Incorrect

Marked out of 2.00

For keeping the variable length records in the block, the slotted page structure is commonly used. There is a header at the beginning of each block, containing the following information:

- I.) The number of record entries in the header
- II.) The end of free space in the block
- III.) An array whose entries contain the location and size of each record.

If a record is deleted then, which of the above information will change

- I and III only
- I, II and III only
- I and II only ✗
- II and III only

Question 4

Correct

Marked out of 1.00

To have a file hold a list, it is necessary to

- Decide which fields will be used as sort or index keys
- Identify the name, width and type of the fields of each record.
- All of the mentioned ✓
- Identify the records in the list

Question 5

Incorrect

Marked out of 1.00

Variable length record arise in database system file due to storage of multiple record types in a file. Here multiple record type means,

- Records from different relations
- Records having multiple attributes
- Records having attributes of multiple types
- Records with variable length attributes ✗

Question 6

Correct

Marked out of 2.00

In the fixed length record file, sometimes we keep the header at the beginning of the file. The key information that header keeps is,

- I.) The address of the first record whose contents are deleted
- II.) The array of addresses of all the records in the file
- III.) The array of addresses and size of all the records in the file
- IV.) The offset and length for different attributes in the record

 II and III Only I, II and III Only IV Only I and II Only I Only II Only**Question 7**

Incorrect

Marked out of 1.00

Disk I/O operation is performed in units of,

 One sector One record One block One file**Question 8**

Incorrect

Marked out of 1.00

A measure that computes the reliability of the disk is called,

 Mean time to success Mean time to access Mean time to failure Mean time to result

Question 9

Incorrect

Marked out of 1.00

If you want to read the records from two different relations using a single I/O operation, which file organization will you prefer?

- Clustering File Organization
- Hash File Organization ✗
- Heap File organization
- Sequential File organization

Question 10

Correct

Marked out of 1.00

_____ is the time from when a read or write request is issued to when data transfer begins.

- Average seek time
- Seek time
- Rotational latency time
- Access time ✓

Question 11

Incorrect

Marked out of 2.00

Which of the following problems need to be solved by the technique for implementing variable-length record.

- I.) How to represent a single record in such a way that individual attribute can be extracted easily
- II.) How to follow the sequence of the record in the file
- III.) How to fetch the record from the Buffer

- I and II both ✗
- II and III both
- II only
- I only

Question 12

Correct

Marked out of 1.00

The disk controller uses _____ at each sector to ensure that the data is not corrupted on data retrieval.

- ErrorCode
- ECC
- Parity
- Checksum

[◀ Quiz3 \(Section 2\)](#)

Jump to...

[Quiz5_Section2 \(6th May 2022\) ►](#)

[Dashboard](#) / My courses / [CS204](#) / [General](#) / [Quiz5_Section2 \(6th May 2022\)](#)

Started on Friday, 6 May 2022, 10:21 AM

State Finished

Completed on Friday, 6 May 2022, 10:26 AM

Time taken 5 mins

Marks 4.00/5.00

Grade 8.00 out of 10.00 (80%)

Question 1

Correct

Mark 1.00 out of 1.00

A relation schema S is having the attributes as follows,

$$S = (G, H, I, J, K, L)$$

The relation schema S holds the following functional dependencies,

$$HI \rightarrow J, G \rightarrow H, K \rightarrow I, J \rightarrow G$$

Which one is the possible set of candidate keys,

Select one:

a. {GK, HK, JK}

b. {GKL, HKL, JKL} ✓

c. {GKL, HKL, HIL}

d. {GK, HK}

Question 2

Correct

Mark 1.00 out of 1.00

The data structure ideal for look up in the range scan operations is,

Select one:

a. Heap

b. Hash Table

c. B + Tree ✓

d. Link List

Question 3

Correct

Mark 1.00 out of 1.00

The following schedules are given involving two transactions.

S1:R₂[x] R₂[y] R₁[x] W₁[x] W₁[y] W₂[y]

S2:R₁[x] W₁[x] R₂[x] W₁[y] R₂[y] W₂[y]

Which one of the following statement is true?

Select one:

- Both S1 and S2 are conflict serializable
- Only S2 is conflict serializable
- None
- Only S1 is conflict serializable

**Question 4**

Correct

Mark 1.00 out of 1.00

Given the following statements:

- S1.) If the records are physically stored in the same order as the order of search key of the index then it is a clustering index
- S2.) The data record of the file are organized in the same order as the data entries of the index, then it is a clustering index
- S3.) If the search key of the index is primary key of the data records, then it is a clustering index
- S4.) Index whose search key specifies an order same as sequential order of the file is clustering index.

Which are the correct statements,

Select one:

- S1, S2 and S3 only
- S4, S1 and S2 only
- S1, S2, S3 and S4
- S3 and S4 only



Question 5

Incorrect

Mark 0.00 out of 1.00

If the record type allows variable length for one or more fields then the Variable-length records arises in the database. So if we have Instructor record with the following type,

Instructor(ID varchar(10), name varchar(20), dept_name varchar(20), salary numeric(8,2))

Then, how much bytes the null bitmap require for the record representation of Instructor.

Select one:

- 4
- 1
- 2
- 5 ✖

[◀ Section-2 Quiz4 \(29 April 2022\)](#)

Jump to...

[Quiz 1 ►](#)

[Dashboard](#) / [My courses](#) / [CS204](#) / [General](#) / [Mid Semester Online Part 1 \(8 March 2022\)](#)

Started on Tuesday, 8 March 2022, 10:03 AM

State Finished

Completed on Tuesday, 8 March 2022, 10:43 AM

Time taken 39 mins 49 secs

Marks 29.00/50.00

Grade **5.80** out of 10.00 (**58%**)

Question **1**

Complete

Mark 1.00 out of 1.00

Which one of the following refers to the copies of the same data (or information) occupying the memory space at multiple places.

- Data Repository
- Data Inconsistency
- Data Mining
- Data Redundancy

Question **2**

Complete

Mark 1.00 out of 1.00

Creating specializations of students based on those doing Academic Research and those doing Industry Internships satisfies which of the following constraints? (It is mandatory to engage in at least one of these (Both may also be considered) as part of the Summer Internship.)

- Disjoint
- Total
- Overlapping
- Partial

Question 3

Complete

Mark 0.00 out of 1.00

Weak entities MUST satisfy which of the following structural constraints.

- Existence Dependency
- Identifying Relationship
- Participation Constraint
- Cardinality Ratio

Question 4

Complete

Mark 1.00 out of 1.00

Creating specializations of employees based on all possible Categories (Gen, SC, ST, OBC, EWS etc.) satisfies which of the following constraints?

- Total
- Overlapping
- Disjoint
- Partial

Question 5

Complete

Mark 0.00 out of 1.00

The structural constraint that specifies the minimum number of relationship instances that an entity can participate in is _____.

- Identifying Relationship
- Participation Constraint
- Cardinality Ratio
- Existence Dependency

Question 6

Complete

Mark 1.00 out of 1.00

Each entity is described by _____.

- Relationship
- None of these
- Entity
- Attribute

Question 7

Complete

Mark 2.00 out of 2.00

Select the correct result of following logical expressions, (here Unknown means NULL)

- I.) Unknown OR True
 - II.) True AND Unknown
 - III.) Unknown AND False
 - IV.) NOT Unknown
-
- (I.) True (II.) False (III.) False (IV.) Unknown
 - (I.) True (II.) Unknown (III.) False (IV.) Unknown
 - (I.) Unknown (II.) False (III.) False (IV.) Unknown
 - (I.) Unknown (II.) Unknown (III.) False (IV.) False

Question 8

Complete

Mark 0.00 out of 1.00

The property that apps can operate on data by invoking methods through their signatures, irrespective of how the method has been implemented, is known as _____.

- Data abstraction
- Data model
- Program-data independence
- Program-operation independence

Question 9

Complete

Mark 0.00 out of 1.00

Data isolation in the file system is the result of,

- Failure of the system
- Multiple files and formats
- Concurrent access by multiple users
- Adding the condition based on the user requirements

Question 10

Complete

Mark 0.00 out of 2.00

If we have two relations *employee* (*name*, *salary*, *deptno*) and *department* (*deptno*, *deptname*, *address*) then select the query that cannot be expressed using the basic relational algebra operations (U, -, x, π, σ, p)?

- Department address of every employee
- All employees of a given department
- Employees whose name is the same as their department name
- The sum of all employees' salaries

Question 11

Complete

Mark 0.00 out of 1.00

In the relational schema, any many-to-one and one-to-many relationship sets that are total on the many-side can be represented by,

- Adding an extra attribute to the "one" side, containing the primary key of the "many" side
- Adding a null value to the "many" side, which is not having association with one side
- Adding an extra attribute to the "many" side, containing the primary key of the "one" side
- Adding a null value to the "one" side which is not having association with many side

Question 12

Complete

Mark 1.00 out of 1.00

The purpose of the E-R diagram is to,

- Simplify Database Organization
- Simplify Database Design
- Simplify Database Programming
- Simplify Database Access

Question 13

Complete

Mark 2.00 out of 2.00

Suppose we have the relations X1(a, b) and X2(c,d). Consider the following query,

```
select distinct a, b  
from X1, X2
```

The output of the above query will definitely be the same as X1 if,

- X2 has no duplicates and X1 is non-empty
- X1 and X2 have no duplicates
- X1 and X2 have the same number of tuples
- X1 has no duplicates and X2 is non-empty

Question 14

Complete

Mark 0.00 out of 1.00

Which is not a data model?

- Entity Relationship Model
- Relational model
- Hierarchical data model
- Semantics data model
- Semi-structured data model

Question 15

Complete

Mark 1.00 out of 1.00



The following image is a symbol for _____.

- Relationship
- Attribute
- Weak Entity
- Entity

Question 16

Complete

Mark 0.00 out of 1.00

If Database Administrator modify the structure of the data record then this modification do not affect other application is called as _____.

- Data Security
- Data Integrity
- Data Isolation
- Data Independence

Question 17

Complete

Mark 0.00 out of 2.00

Find the names of those students with section and marks whose marks grater than 60 but section must be either A or B.

- Select name, section, marks from student_data where section = A and section = B and marks > 60;
- Select name, section, marks from student_data where section = A or section = B and marks > 60;
- Select name, section, marks from student_data where section = A or B and marks > 60;
- Select name, section, marks from student_data where section = A or section = B or marks > 60;
- Select name, section, marks from student_data where section = A and section = B or marks > 60;

Question 18

Complete

Mark 1.00 out of 1.00

Creating specializations of employees based on Religion satisfies which of the following constraints? (Hindu, Muslim, Christian are the only options provided whereas some employees may have other than these three religion also)

- Total
- Disjoint
- Partial
- Overlapping

Question 19

Complete

Mark 0.00 out of 1.00

Consider the following Query,

```
SELECT name, course_id FROM instructor, teaches WHERE instructor.ID= teaches.ID;
```

The above query can also be replaced with,

- Select name, course_id from teaches, instructor where instructor.id=course.id;
- Select name, course_id from instructor natural join teaches;
- Select course_id from instructor join teaches;
- Select name, course_id from instructor;

Question 20

Complete

Mark 1.00 out of 1.00

Which one of the following keyword is used to find out the number of values in a column?

- Count
- Sum
- Total
- Add

Question 21

Complete

Mark 0.00 out of 1.00

Given a set S, its powerset is denoted by P(S). Assuming that D represents the domain of an attribute B of an entity type X, which of the following functions make sense?

- X: B $\rightarrow\rightarrow$ P(D)
- B: P(X) $\rightarrow\rightarrow$ D
- X: P(D) $\rightarrow\rightarrow$ B
- B: X $\rightarrow\rightarrow$ P(D)

Question 22

Complete

Mark 1.00 out of 1.00

Data dictionary is responsible for keeping the,

- Data about relation
- Data about specific users
- Data about data
- Data about user

Question 23

Complete

Mark 1.00 out of 1.00

The following are functions of a DBMS except _____ .

- Processing Data
- Creating and processing forms
- Creating Databases
- Administrating Databases

Question 24

Complete

Mark 2.00 out of 2.00

Suppose we have two relations location(city, state, country) and weather(city, temperature, humidity, condition). What will be the query for finding the names of all cities with their temperature, humidity and countries.

- Select city, temperature, humidity, country from location;
- Select weather.city, temperature, humidity, country from weather, location;
- Select location.city, temperature, humidity, country from weather, location where city = select city from location where location.city = weather.city;
- Select location.city, temperature, humidity, country from weather, location where weather.city=location.city;

Question 25

Complete

Mark 1.00 out of 1.00

Logical data independence provides transparency between which two layers of the Three-Schema Architecture?

- External and Internal
- External and Conceptual
- Conceptual and Internal

Question 26

Complete

Mark 2.00 out of 2.00

Let R and S be two relations with the following schema

R (P, Q, R1, R2, R3)

S (P, Q, S1, S2)

Where {P, Q} is the key for both schemas. Which of the following queries are equivalent?

- I. $\Pi_P(R \bowtie S)$
- II. $\Pi_P(R) \bowtie \Pi_P(S)$
- III. $\Pi_P(\Pi_{P,Q}(R) \cap \Pi_{P,Q}(S))$
- IV. $\Pi_P(\Pi_{P,Q}(R) - (\Pi_{P,Q}(R) - \Pi_{P,Q}(S)))$

- Only I, II and III
- Only I, III and IV
- Only I and II
- Only I and III

Question 27

Complete

Mark 0.00 out of 2.00

Match the concepts to the correct category of data models:

Record format, record orderings, access paths

Implementation

relations, tuples, rows, fields

Conceptual

entity, attributes and relationships

Physical

Question 28

Complete

Mark 1.00 out of 1.00

An ERs purpose is to support a user's perception of the data and conceal the technical aspects associated with database design.

Select one:

True

False

Question 29

Complete

Mark 2.00 out of 2.00

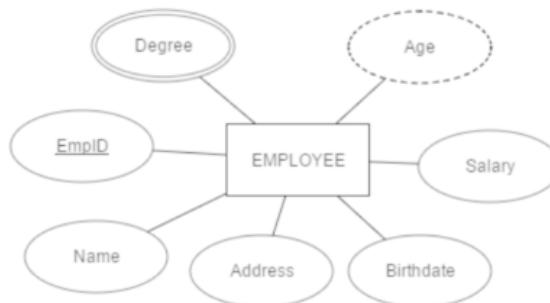
Suppose we have two relations location(city, state, country) and weather(city, temperature, humidity, condition). What will be the query for finding the countries where the weather condition is cloudy.

- Select country from location where city union (select city from weather where condition = 'cloudy');
- Select country from location where city in (select city from weather where condition = 'cloudy')
- Select country from location where city in (select city from location where condition = 'cloudy');
- Select country from location where condition = 'cloudy';
- Select country from location where city intersect (select city from weather where condition = 'cloudy');

Question 30

Complete

Mark 1.00 out of 1.00



The following diagram is having the entity,

- EmpID
- Employee
- Degree
- Derived Birthdate

Question 31

Complete

Mark 0.00 out of 1.00

What will be the output of the following query,

```

select distinct T.name
from instructor as T, instructor as S
where T.salary > S.salary and S.dept name = 'Biology';
  
```

- Find names of instructors with salary greater than that of at least two instructor
- Find names of instructors with salary greater than that of some instructor in the Biology department.
- Find names of instructors with salary greater than that of all instructor in the Biology department.
- Find names of instructors with salary greater than that of at least two instructor in the Biology department.

Question 32

Complete

Mark 0.00 out of 1.00

Logical database design describes base relations, file organizations, and indexes that are used to achieve efficient access to data.

Select one:

- True
- False

Question 33

Complete

Mark 1.00 out of 1.00

In the following Query, which of the following can be placed in the Query's blank portion to display the salary from highest to lowest amount, and sorting the employ's name alphabetically?

```
SELECT *
FROM instructor
ORDER BY salary _____, name _____;
```

- Desc, Asc
- Asc, Desc
- Ascending, Descending
- Descending, Ascending

Question 34

Complete

Mark 1.00 out of 1.00

The three-schema architecture was proposed to help achieve and visualize which of the following characteristics of the database approach?

- Multiple User View
- Self-describing nature of a database
- Sharing of Data
- Data Abstraction
- Multiuser Transaction Processing

Question 35

Complete

Mark 1.00 out of 1.00

A transaction is,

- a single operations that performs multiple logical function in a database application
- a collection of operations that performs multiple logical function in a database application
- a collection of operations that performs a single logical function in a database application
- a single operations that performs a single logical function in a database application

Question 36

Complete

Mark 1.00 out of 1.00

A key defines a uniqueness constraint on the tuples in a relation. Which among the following types of keys violates this definition?

- Super key
- Partial key
- Candidate key
- Primary key

Question 37

Complete

Mark 0.00 out of 2.00

An ER model of a database consists of entity types A and B. These are connected by a relationship R which does not have its own attribute. Under which one of the following conditions, can the relational table for R be merged with that of A?

- Relationship R is one-to-many from B to A and the participation of A in R is partial.
- Relationship R is many-to-one from B to A and the participation of A in R is total.
- Relationship R is many-to-one from B to A and the participation of A in R is partial.
- Relationship R is one-to-many from B to A and the participation of A in R is total.

Question 38

Complete

Mark 0.00 out of 2.00

In an E-R diagram, If there is a directed double line ($=>$) from the relationship "advisor" to the entity set "instructor" and undirected single line from the relationship "advisor" to the entity set "student", then it denotes,

- An instructor can be an advisor of more than one student and a student must have atleast one advisor
- A student can have more than one instructor as an advisor and the instructor must be an advisor of atleast one student
- A single student can not have more than one instructor as an advisor and the instructor must be an advisor of atleast one student
- An instructor can not be an advisor of more than one student and a student must have atleast one advisor

Question 39

Complete

Mark 1.00 out of 1.00

The structural constraint that specifies the maximum number of relationship instances that an entity can participate in is _____.

- Participation Constraint
- Existence Dependency
- Identifying Relationship
- Cardinality Ratio

Question 40

Complete

Mark 1.00 out of 1.00

Which of the following SQL command is used to select only one copy of each set of duplicate rows?

- Select Different
- Select Distinct
- Select Unique
- All of the above
- Select Top 1

[◀ Quiz1 \(4 March 2022\)](#)

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[Mid Semester Online Part 2 \(8 March 2022\) ►](#)

Started on Tuesday, 8 March 2022, 10:48 AM

State Finished

Completed on Tuesday, 8 March 2022, 11:25 AM

Time taken 36 mins 47 secs

Marks 47.00/50.00

Grade **9.40** out of 10.00 (**94%**)

Question 1

Complete

Mark 3.00 out of 3.00

If we apply the following relational algebra query in the given relation A. Then, how many tuples will be there in the answer.

$\pi_{A1.col1}(\sigma_{A1.col2 > A2.col2}(p_{A1 A \times p_{A2 A}}))$

A

A.col1	A.col2
'a'	4
'r'	7
'e'	9
'q'	10
'u'	5
'w'	8
'u'	2

- 6
- 5
- 8
- 7
- 4

Question 2

Complete

Mark 4.00 out of 4.00

Consider the following relation,

R**Name Number**

Amit 2

Akash 4

Arif 3

Akhil 5

 $\pi_{r1.Number, r2.Name} (\sigma_{r1.Number < r2.Number} ((\rho_{r1}(R)) \times (\rho_{r2}(R))))$

The output of the above query will include the following names,

- Only Akhil
- Only Amit
- Amit, Akash, Arif
- Akash and Arif
- Akash, Arif, Akhil

Question 3

Complete

Mark 3.00 out of 3.00

Consider the following relations,

Student**StID StName Major Age**

2	'Smith'	'cs'	23
3	'Anil'	'ee'	21
4	'Amit'	'cs'	21
5	'Akash'	'ee'	24
6	'Vikas'	'ece'	22
7	'Pahal'	'ece'	23

Course**Course_code Course_name Credit**

'CS401'	'DC'	3
'CS204'	'DBMS'	3
'CS301'	'CN'	3
'IT101'	'CP'	3

Student_course**StID Course_code**

3	'CS301'
4	'CS401'
5	'IT101'
3	'CS401'
2	'CS204'
4	'CS301'
5	'CS204'
4	'IT101'
3	'CS204'
5	'CS301'
2	'IT101'
4	'CS204'
3	'IT101'

$\pi \text{StID} (\text{Student}) - (\text{Student}_\text{course} \div \pi \text{Course_code} (\text{Course}))$

Output of the above query will include the following StID,

- 2, 3, 5, 7 only
- 6 only
- 2, 4, 5, 6 only
- 2, 5, 6, 7 only
- 3, 4, 5, 6 only
- 3, 4, 5, 6, 7 only

Question 4

Complete

Mark 4.00 out of 4.00

Consider the following relations,

manage**name manage**

'A'	'E'
'B'	'C'
'C'	'G'
'D'	'E'
'F'	'E'
'E'	'G'

Emp**name street city**

'A'	'x'	1
'B'	'y'	2
'C'	'z'	3
'D'	'x'	1
'E'	'x'	4
'F'	'y'	2
'G'	'z'	3

$\pi_{\text{emp1.name}} (\sigma_{\text{manage.manage}=\text{emp2.name} \wedge \text{emp1.street} = \text{emp2.street}} ((\sigma_{\text{emp1.name} = \text{manage.name}} (\rho_{\text{emp1}}(\text{emp}) \times \text{manage})) \times \rho_{\text{emp2}}(\text{emp})))$

Output of the above query will include the following names,

- A, B, D, E, F only
- A, B, D, G only
- C only
- B, F, C only
- A, C, D only

Question 5

Complete

Mark 4.00 out of 4.00

Consider the following relations

employee**empId empName empAge**

1	'AB'	25
2	'CD'	23
3	'EF'	31
4	'QW'	27
5	'BD'	30
6	'AD'	32
7	'EQ'	26

dependent**depId eId depName depAge**

1	1	'ab'	29
2	1	'bd'	12
3	2	'eq'	15
4	3	'qr'	33
5	3	'tr'	30
6	4	'rt'	13
7	6	'we'	36
8	7	'ut'	35

$\pi_{\text{depId}, \text{eId}, \text{depName}, \text{depAge}}(\text{dependent}) - \pi_{\text{d1.depId}, \text{d1.eId}, \text{d1.depName}, \text{d1.depAge}}(\sigma_{\text{d1.depAge} > \text{d2.depAge}}(p_{\text{d1}} \text{dependent} \times p_{\text{d2}} \text{dependent}))$

How many number of tuples will be there in the output of the above query?

- 5
- 3
- 1
- 2
- 4

Question **6**

Complete

Mark 3.00 out of 3.00

Select the relational algebra expression which matches with the relational algebra expression $\pi_{A1}(\pi_{A2}(\sigma_{F1}(\sigma_{F2}(r))))$, where $A1, A2$ are sets of attributes in r with $A1 \subset A2$ and $F1, F2$ are Boolean expressions based on the attributes in r ?

$\pi_{A1}(\sigma_{(F1 \wedge F2)}(r))$

$\pi_{A2}(\sigma_{(F1 \vee F2)}(r))$

$\pi_{A2}(\sigma_{(F1 \wedge F2)}(r))$

$\pi_{A1}(\sigma_{(F1 \vee F2)}(r))$

Question 7

Complete

Mark 4.00 out of 4.00

Consider the following relations

employee

empId empName empAge

1	'AB'	25
2	'CD'	23
3	'EF'	31
4	'QW'	27
5	'BD'	30
6	'AD'	32
7	'EQ'	26

dependent

depId eId depName depAge

1	1	'ab'	29
2	1	'bd'	12
3	2	'eq'	15
4	3	'qr'	33
5	3	'tr'	30
6	4	'rt'	13
7	6	'we'	36
8	7	'ut'	35

$\pi_{\text{empId}}(\text{employee}) - \pi_{\text{empId}}(\sigma_{\text{employee.empId} = \text{dependent.eId} \wedge \text{employee.empAge} < \text{depAge}}(\text{employee} \times \text{dependent}))$

The above query will give the following employee ids.

- 1, 4, 6
- 6, 7
- 2, 3, 4
- 1, 3, 5
- 2, 4, 5

Question 8

Complete

Mark 3.00 out of 3.00

Consider the following relation,

R**Name Number**

Amit 2

Akash 4

Arif 3

Akhil 5

 $\Pi r1.Number, r2.Name (\sigma r1.Number > r2.Number ((\rho_{r1}(R)) \times (\rho_{r2}(R))))$

In the output of the above query the missing numbers are,

- Number 3 only
- Number 2 only
- Number 4 and 5 only
- Number 5 only
- Number 2 and 3 only

Question 9

Complete

Mark 4.00 out of 4.00

Consider the following relations

employee**empId empName empAge**

1	'AB'	25
2	'CD'	23
3	'EF'	31
4	'QW'	27
5	'BD'	30
6	'AD'	32
7	'EQ'	26

dependent**depId eId depName depAge**

1	1	'ab'	29
2	1	'bd'	12
3	2	'eq'	15
4	3	'qr'	33
5	3	'tr'	30
6	4	'rt'	13
7	6	'we'	36
8	7	'ut'	35

$\pi_{\text{empId}} (\sigma_{\text{empId} = \text{eId}} (\text{employee} \times \rho_A (\pi_{\text{depId}, \text{eId}, \text{depName}, \text{depAge}} (\text{dependent}) - \pi_{\text{d1.depId}, \text{d1.eId}, \text{d1.depName}, \text{d1.depAge}} (\sigma_{\text{d1.depAge} > \text{d2.depAge}} (\rho_{\text{d1}} \text{dependent} \times \rho_{\text{d2}} \text{dependent}))))))$

The above query will give the following employee ids.

- 3
- 1
- 2, 4
- 2
- 1, 2

Question 10

Complete

Mark 4.00 out of 4.00

Consider the following relations,

manage**name manage**

'A'	'E'
'B'	'C'
'C'	'G'
'D'	'E'
'F'	'E'
'E'	'G'

Emp**name street city**

'A'	'x'	1
'B'	'y'	2
'C'	'z'	3
'D'	'x'	1
'E'	'x'	4
'F'	'y'	2
'G'	'z'	3

$$\sigma_{\text{manage.manage} = \text{emp2.name}} ((\sigma_{\text{emp1.name} = \text{manage.name}} (\rho_{\text{emp1}}(\text{emp}) \times \text{manage})) \times \rho_{\text{emp2}}(\text{emp}))$$

How many tuples will be there in the output of the above query?

- None of the mentioned
- 4
- 5
- 7
- 6

Question 11

Complete

Mark 3.00 out of 3.00

The relation **studInfo**(studId, name, sex) keeps the information about the students. The relation **enroll**(studId, courseld) gives which student has enrolled for (or taken) what course(s). Assume that every course is taken by at least one male and at least one female student. What does the following relational algebra expression represent?

$$\prod_{courseld}((\prod_{studId}(\sigma_{sex='female'}(studInfo)) \times \prod_{courseld}(enroll)) - enroll)$$

- Courses in which all the female students are enrolled.
- Courses in which a proper subset of female students are enrolled.
- None of the mentioned
- Courses in which only male students are enrolled.

Question 12

Complete

Mark 0.00 out of 3.00

Let R and S be two relations with the following schema

R (P,Q,R1,R2,R3)

S (P,Q,S1,S2)

Where {P, Q} is the key for both schemas. Which of the following queries are equivalent?

- I. $\prod_P (R \bowtie S)$
- II. $\prod_P (R) \bowtie \prod_P (S)$
- III. $\prod_P (\prod_{P,Q} (R) \cap \prod_{P,Q} (S))$
- IV. $\prod_P (\prod_{P,Q} (R) - (\prod_{P,Q} (R) - \prod_{P,Q} (S)))$

- II, III and IV only
- I and III only
- III and IV only
- I, III and IV only
- I, II and III only

Question 13

Complete

Mark 4.00 out of 4.00

Consider the following relations,

manage**name manage**

'A'	'E'
'B'	'C'
'C'	'G'
'D'	'E'
'F'	'E'
'E'	'G'

Emp**name street city**

'A'	'x'	1
'B'	'y'	2
'C'	'z'	3
'D'	'x'	1
'E'	'x'	4
'F'	'y'	2
'G'	'z'	3

$\pi_{\text{manage.manage}} (\sigma_{\text{manage.manage} = \text{emp2.name}} ((\sigma_{\text{emp1.name} \neq \text{emp2.name}} \wedge \text{emp1.street} = \text{emp2.street} \wedge \text{emp1.city} = \text{emp2.city}} (\rho_{\text{emp1}}(\text{emp}) \times \rho_{\text{emp2}}(\text{emp}))) \times \text{manage}))$

How many tuples will be there in the output of the above query?

- 2
- 1
- None of the mentioned
- 4
- 3

Question 14

Complete

Mark 4.00 out of 4.00

Consider the following relations,

manage**name manage**

'A'	'E'
'B'	'C'
'C'	'G'
'D'	'E'
'F'	'E'
'E'	'G'

Emp**name street city**

'A'	'x'	1
'B'	'y'	2
'C'	'z'	3
'D'	'x'	1
'E'	'x'	4
'F'	'y'	2
'G'	'z'	3

$$\pi_{\text{manage.name}} (\sigma_{\text{emp1.city} = \text{emp2.city} \wedge \text{manage.manage} = \text{emp2.name}} ((\sigma_{\text{emp1.name} = \text{manage.name}} (\rho_{\text{emp1}}(\text{emp}) \times \text{manage})) \times \rho_{\text{emp2}}(\text{emp})))$$

Output of the above query will include the following names,

- A, C, D only
- A, D only
- C only
- A, C only
- A only

[◀ Mid Semester Online Part 1 \(8 March 2022\)](#)

Jump to...

Lecture 1: 17-01-22 ►

[Dashboard](#) / My courses / [CS204](#) / [General](#) / [Quiz1 \(4 March 2022\)](#)

Started on Friday, 4 March 2022, 11:10 AM

State Finished

Completed on Friday, 4 March 2022, 11:15 AM

Time taken 4 mins 59 secs

Grade 4.00 out of 6.00 (67%)

Question 1

Correct

Mark 1.00 out of 1.00

Degree of a relationship

- is always two
- Number of participating entities in the relationship ✓
- Number of descriptive attributes associated with the relationship
- is always one

Question 2

Correct

Mark 1.00 out of 1.00

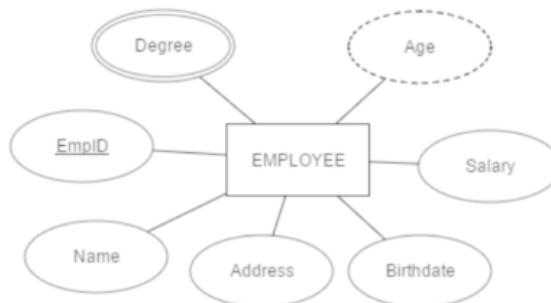
What is Database Management System?

- A software system that enables users to create and access to the database.
- A software system that enables users to access to the database.
- A software system that enables users to define, create, maintain and control access to the database. ✓
- A software system that enables users to maintain and control access to the database.

Question 3

Correct

Mark 1.00 out of 1.00



The following diagram is having the entity,

- Derived Birthdate
- EmpID
- Employee
- Degree

**Question 4**

Correct

Mark 1.00 out of 1.00

ER diagram creates a _____ of the database _____.

- logical structure, graphically
- physical structure, numerically
- physical structure, graphically
- logical structure, numerically

**Question 5**

Incorrect

Mark 0.00 out of 2.00

If there is a directed line(->) from the relationship set "belongs_to" to the entity sets "account" and "customer". This indicates,

- More than one account may belong to a single customer
- Each customer has at least one account
- An account cannot belong to more than one customer
- Each account should have at least one customer



[◀ Announcements](#)

Jump to...

[Dashboard](#) / My courses / [CS204](#) / [General](#) / [Quiz3 \(Section 2\)](#)

Started on Thursday, 21 April 2022, 10:01 AM

State Finished

Completed on Thursday, 21 April 2022, 10:02 AM

Time taken 1 min 23 secs

Question 1

Incorrect

Marked out of 1.00

Functional dependencies are a generalization of

- Relation dependencies ✗
- Database dependencies
- Tuple dependencies
- Key dependencies

Question 2

Incorrect

Marked out of 1.00

The database management system can be considered as the collection of _____ that enables us to create and maintain the database.

- Programs
- Tables
- Relations ✗
- Translators

Question 3

Correct

Marked out of 1.00

A non-clustering index needs to be defined on,

- Search key of Sequential file
- Any set of attributes ✓
- Set of attributes having Unique key
- Primary key of relation

Question 4

Correct

Marked out of 1.00

Index files are usually stored in _____ organization.

- Hash File
- Heap File
- Sequential File ✓
- Multitable Clustering File

Question 5

Incorrect

Marked out of 1.00

Primary index should be defined as _____ whereas Secondary index should always be defined as _____.

- Dense as well as Sparse, Dense
- Dense, Sparse
- None of these ✗
- Sparse, Sparse

[◀ Mid Semester Online Part 2 \(8 March 2022\)](#)[Jump to...](#)[Section-2 Quiz4 \(29 April 2022\) ►](#)

[Dashboard](#) / My courses / [CS204](#) / [General](#) / [Quiz3](#)

Started on Thursday, 21 April 2022, 10:01 AM

State Finished

Completed on Thursday, 21 April 2022, 10:02 AM

Time taken 1 min 7 secs

Question 1

Complete

Marked out of 1.00

Primary index should be defined as _____ whereas Secondary index should always be defined as _____.

- Dense as well as Sparse, Dense
- Dense, Sparse
- Sparse, Sparse
- None of these

Question 2

Complete

Marked out of 1.00

A non-clustering index needs to be defined on,

- Set of attributes having Unique key
- Primary key of relation
- Any set of attributes
- Search key of Sequential file

Question 3

Complete

Marked out of 1.00

Index files are usually stored in _____ organization.

- Multitable Clustering File
- Heap File
- Hash File
- Sequential File

Question 4

Complete

Marked out of 1.00

The database management system can be considered as the collection of _____ that enables us to create and maintain the database.

- Programs
- Translators
- Tables
- Relations

Question 5

Complete

Marked out of 1.00

Functional dependencies are a generalization of

- Tuple dependencies
- Relation dependencies
- Database dependencies
- Key dependencies

[◀ Mid Semester Online Part 2 \(8 March 2022\)](#)

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Lecture 1: 17-01-22 ►