Final Exam

Due Aug 5 at 11:59pm   **Points** 60   **Questions** 60

Available Aug 5 at 12am - Aug 5 at 11:59pm 23 hours and 59 minutes

Time Limit 150 Minutes

This quiz was locked Aug 5 at 11:59pm.

Attempt History

	Attempt	**Time**	**Score**
LATEST	**Attempt 1**	79 minutes	60 out of 60

⚠ Correct answers are hidden.

Score for this quiz: **60** out of 60

Submitted Aug 5 at 1:20pm

This attempt took 79 minutes.

Question 1	**1 / 1 pts**

Weak entities are represented using _____ in ER Diagrams.

◉ Double Rectangles

○ Triangles

○ Circles

○ Double Diamonds

Question 2	**1 / 1 pts**

Which of the following concepts exist in both EER and ER?

○ Category

○ Generalization

◉ Identifying relationships

○ Specialization

Question 3   1 / 1 pts

Given an entity type A which contains 200 entities, and its all four subclasses which contains 20, 40, 60, 80 entities correspondingly. If it is known that the Completeness constraint is satisfied for this specialization, which of the following statements is true?

○ Disjointness must NOT be satisfied

◉ Disjointness must also be satisfied

○ Cannot tell. Not enough information.

Question 4   1 / 1 pts

Which process is mainly involved in the Top-down conceptual refinement?

◉ Specialization

○ None of them

○ Generalization

○ Both of them equally

Question 5   1 / 1 pts

Given a Relationship Type with its 4 involving entity types each having 3 entities. What is the maximum number of distinct Relationship Instances that can possibly exist in this Relationship Type?

○ 12

○ 64

○ 7

◉ 81

Question 6   1 / 1 pts

Given a relation R which consists of 4 attributes, what is the maximum possible number of different candidate keys it can possess?

(If necessary, you are allowed to use a calculator (or the calculator app on your computer) to solve this question)

○ 4

○ 1

⊙ 6

○ ∞ (Infinity)

Question 7   1 / 1 pts

Given a relation R which consists of 4 attributes, what is the maximum possible number of different super keys it can possess?

(If necessary, you are allowed to use a calculator (or the calculator app on your computer) to solve this question)

⊙ 15

○ 4

○ 12

○ 1

Question 8   1 / 1 pts

Which of the following discussion on Views in databases is True?

○ When a view is dropped, its rows are deleted from the storage by the database

⊙ Referencing to Large views in queries can be time consuming

○ They are explicitly stored.

○ Creating large views in database is time consuming

Question 9   1 / 1 pts

What happens if an insertion that violates one or more constraints is performed?

○ The database crushes

○ The data will be inserted with a warning attached

○ The corresponding table will be dropped from the database

◉ The insertion will be rejected

Question 10   1 / 1 pts

Which of the following isn't a level of three-schema architecture?

○ External

◉ Virtual

○ Conceptual

○ Internal

Question 11   1 / 1 pts

Given a relation R with 5 rows and a relation S with 6 rows.

What is the minimum possible number of rows in the result of R left outer join S on some condition?

○ 0

○ 30

◉ 5

○ 6

Question 12   1 / 1 pts

Given a relation R with 5 rows and a relation S with 6 rows.

What is the minimum possible number of rows in the result of R full outer join S on some condition?

○ 6

○ 0

◉ 11

○ 5

Question 13   1 / 1 pts

Given the following two tables:

A			B	
W1	W2		Q1	Q2
0	1		1	0
1	2		1	0
3	4		4	0

How many rows will the in the result of the following query?

Select *

From A Right Outer Join B on A.W1 = B.Q1

- ○ 1
- ◉ 3
- ○ 4
- ○ 2

Question 14   1 / 1 pts

Given the following schemas of the two tables A and B,

A(Q, W, R, T)

B(W, R, T, Y)

How many **columns** will there be in the result of the following query?

Select *

From A, B

⦿ 8

○ 6

○ 7

○ 5

Question 15

1 / 1 pts

Given the following **schema of table A**

A (Q1 int not NULL,

　　Q2 int,

　　Primary key(Q1),

　　Foreign Key (Q2) References B(W2))

and the following **table B** in the database:

W1 W2
0   0
1   2
2   4

Which of the following is a valid tuple for table A?

○ 'a', 2

⦿ 0, Null

○ 1, 1

○ Null, 0

Question 16   1 / 1 pts

Given the following table T:

A	B
0	ab
1	aabb
2	ababa
3	abcacbc

How many rows will the in the result of the following query?
Select *
From T
Where B Like '_%a%b_'

- ○ 2

- ○ 0

- ◉ 3

- ○ 1

Question 17   1 / 1 pts

Given the following table T:

A	B
0	bbbbb
1	aaaabb

2   ababa
3   baaaaba

How many rows will the in the result of the following query?

Select *

From T

Where B Like '%b%b'

○ 3

○ 4

○ 1

◉ 2

Question 18   1 / 1 pts

Given the following two SQL queries:

1.

Select Distinct Name

From Some_table

2.

(Select Name

From Some_table)

Union All

(Select Name

From Some_table)

Assuming Some_table is not empty and duplicates (Tuples that have the same Name) **do exist** in it, which of the following statement is correct?

○ Second query is invalid

○ They always produce the same result.

○ Can't not tell. It depends.

◉ They always produce different results.

Question 19   1 / 1 pts

Given the following two SQL queries:

1.

Select Distinct Name

From Some_table

2.

(Select Name

From Some_table)

Union All

(Select Name

From Some_table)

Assuming Some_table is not empty and duplicates (Tuples that have the same Name) **do not exist** in it, which of the following statement is correct?

○ Can't not tell. It depends.

○ They always produce the same result.

○ Second query is invalid

◉ They always produce different results.

Question 20   1 / 1 pts

Use the Following tables to answer rest of the questions.

Empty Cells Indicates NULL value.

Workers

WORKER_ID	FIRST_NAME	LAST_NAME	SALARY	JOINING_DATE	DE
1	Monika	Arora	100000	2014-02-20 09:00:00	HR
2	Mike	Jones	80000	2014-06-11 09:00:00	Ad
3	George	Harris	300000	2014-02-20 09:00:00	HR
4	Sarah	Robinson	500000	2014-02-20 09:00:00	Ad
5	Josh	Johnson	450000	2014-06-11 09:00:00	Ad
6	Elise	Müller	200000	2014-06-11 09:00:00	Ac
7	Albert	Ziegfeld	75000	2014-01-20 09:00:00	Ac
8	Lukas	Wagner	100500	2014-04-11 09:00:00	Ad
9	Azuki	Shinomiya			
10	Mohammed	Al'Quraishi			

Bonus

WORKER_ID	BONUS_DATE	BONUS_AMOUNT
1	2016-02-20 00:00:00	5000
2	2016-06-11 00:00:00	3000
3	2016-02-20 00:00:00	4000
1	2016-02-20 00:00:00	4500
2	2016-06-11 00:00:00	3500

Contact

WORKER_ID	CELL_PHONE	HOME_PHONE
1	111-11111111	111-11111110
2	222-22222222	
3	333-33333333	333-33333330
4	444-44444444	
5	555-55555555	555-55555550

Title

WORKER_ID	WORKER_TITLE	AFFECTED_FROM
1	Manager	2016-02-20 00:00:00
2	Executive	2016-06-11 00:00:00
8	Executive	2016-06-11 00:00:00
5	Manager	2016-06-11 00:00:00
4	Asst. Manager	2016-06-11 00:00:00
7	Executive	2016-06-11 00:00:00
6	Lead	2016-06-11 00:00:00
3	Lead	2016-06-11 00:00:00
15		1970-01-01 00:00:00
21		1970-01-01 00:00:00
37		1970-01-01 00:00:00

Which of the followings should be fill into the blanks of the query below to

find the worker with the **Highest** salary?

Select *

From Workers

Where Salary _____ _____ (

                    Select Salary

                    From Workers

)

◄ ▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓ ►

- ○ >= ANY

- ◉ >= ALL

- ○ <= ALL

- ○ <= ANY

Question 21   1 / 1 pts

Which of the followings should be fill into the blanks of the query below to find the worker with the **lowest** salary?

Select *

From Workers as W1

Where _____ (

                    Select *

                    From Workers as W2

                    Where W2.Salary _____ W1.Salary

)

○ EXISTS, >

○ NOT EXISTS, >

◉ NOT EXISTS, <

○ EXISTS, <

Question 22   1 / 1 pts

Which of the followings should be fill into the blanks of the query below to find the worker with the **lowest** salary?

Select *

From Workers as W1

Where W1.Salary _____(

                              Select _____(Salary)

                              From Workers as W2

                              Group By(*)

)

◉ =, MIN

○ =, MAX

○ !=, MIN

○ !=, MAX

Question 23   1 / 1 pts

Can the previous query be modified to not contain sub-queries while maintaining its functionality?

If so, which of the following keywords is required for the modification?

○ JOIN

○ No, it is not possible to do so.

◉ Either of them (VIEW and JOIN) can do the job

○ VIEW

Question 24   1 / 1 pts

Which of the followings should be fill into the blank such that **no null values will exist in the resulting table**?

Select FirstName, LastName

From Workers ___**A**___ Join Titles On Workers.WORKER_ID = Titles.WORKER_ID

○ right outer

◉ inner

○ left outer

○ full outer

Question 25   1 / 1 pts

Can the query in the previous question be implemented without the "Join" Keyword?

⦿ True

○ False

Question 26   1 / 1 pts

Answer question 26-27 based on the following Query.

Select W1.WORKER_ID, __A__(*)

From Workers as W1 Inner Join Workers as W2

      on W1.Sallary __B__ W2.Sallary

Group By W1.WORKER_ID

Having __A__(*) = 4

It is known that this query is used to find the ID of the worker with the **Fifth Highest** salary.

Note that **NO TWO EMPLOYEES HAVE THE EXACT SAME SALARY**

Which of the followings should be filled into **blank A**?

○ Max

⦿ Count

○ Sum

○ Min

Question 27   1 / 1 pts

Which of the followings should be filled into **blank B**?

○ >

○ <=

○ >=

⦿ <

Question 28   1 / 1 pts

Is it possible to construct a query that also finds the ID of the worker with
the Fifth Highest salary without using the **Having** keyword?

⦿ Yes

○ No

Question 29   1 / 1 pts

How many rows will there be in the result of the following query?

Select Count(*)

From Title

GROUP BY WORKER_TITLE

○ 4

○ 7

○ It returns error.

◉ 5

Question 30   1 / 1 pts

Which of the followings should be filled in to the blank to find the total number of rows in the table Workers?

Select Count(*)

From Workers

_____

○ Group by FirstName

○ Group by WorkerID

○ Group By *

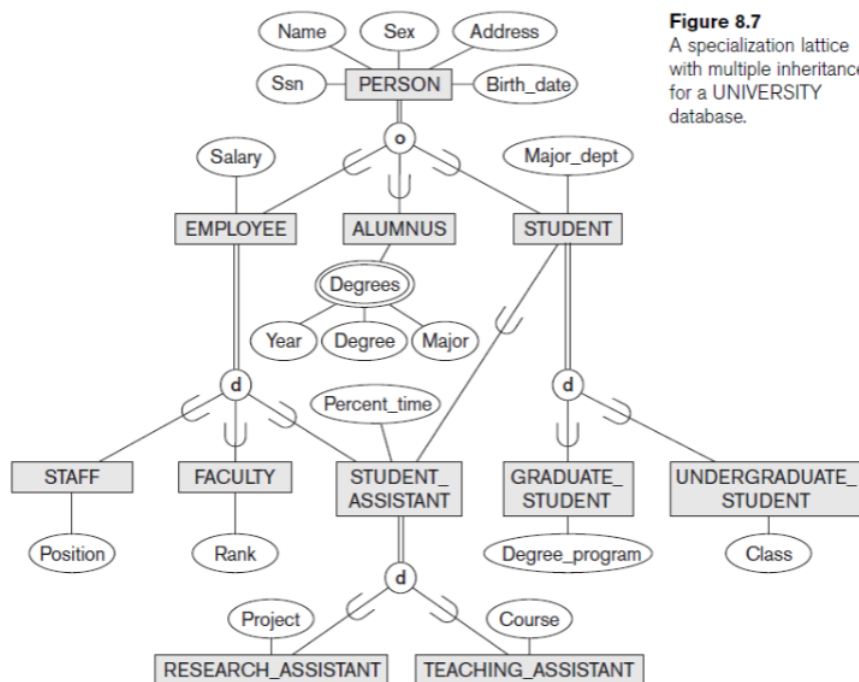
⊙ Nothing; The first two lines will do the job.

Question 31   1 / 1 pts

Answer question Q31-Q33 based on the following diagram.

How many direct subclasses does "PERSON" have?

Figure 8.7
A specialization lattice with multiple inheritance for a UNIVERSITY database.

⊙ 3

○ 1

○ 7

○ 5

Question 32   1 / 1 pts

How many direct superclasses does "STUDENT_ASSISTANT" have?

- ○ 0

- ○ 1

- ○ 3

- ◉ 2

Question 33   1 / 1 pts

How many attributes does "RESEARCH_ASSISTANT" have?

- ○ 3

- ○ 1

- ○ 4

- ◉ 9

Question 34   1 / 1 pts

Which process is mainly involved in the Bottom-up conceptual synthesis?

○ None of them

◉ Generalization

○ Both of them equally

○ Specialization

Question 35   1 / 1 pts

Consider the entity set "Students", "Courses" and the binary relationship "Takes" defined from "Students" to "Courses". What is cardinality ratio of "Takes"?

○ N:1

○ 1:1

○ 1:N

◉ N:M

Question 36   1 / 1 pts

Attributes that show up in various entity types are known as

◉ Derived Attributes

○ Multivalued Attributes

○ Single-valued Attributes

Question 37   1 / 1 pts

Generally speaking, that is without further specific constraint/schema provided, a subclass can be have multiple superclasses in the EER model.

◉ True

○ False

Question 38   1 / 1 pts

If a Relationship Type involves 4 entity types and contains 8 relationship instances, what is the degree of it?

○ 1

○ 8

◉ 4

○ 2

Question 39   1 / 1 pts

Which of the following concepts in the ER model most resembles that of a table in database?

- ⦿ Entity Type

- ◯ Attribute

- ◯ Intersect

- ◯ Entity

Question 40   1 / 1 pts

Which of the following statements about Views in SQL is NOT true?

- ⦿
  Views need to be manually updated when the tables that were used to create it have changed.

- ◯ A View is a single table derived from other tables

- ◯ Views are considered to be a virtual tables

- ◯ Views can be referenced in FROM clauses just like regular tables.

Question 41   1 / 1 pts

True/False : In SQL, it is possible to have two rows that are completely identical in all their columns existing in the same table.

○ True

○ False

Question 42   1 / 1 pts

Which of the following SQL keywords is NOT used to modify the rows of a given table?

○ Insert

○ Delete

○ Update

◉ Alter

Question 43   1 / 1 pts

In precedence of set operators, the expression is evaluated from

◉ Left to right

○ Right to left

○ Left to left

○ From user specification

Question 44   1 / 1 pts

Answer Question 44-45 using the according to the following diagram:

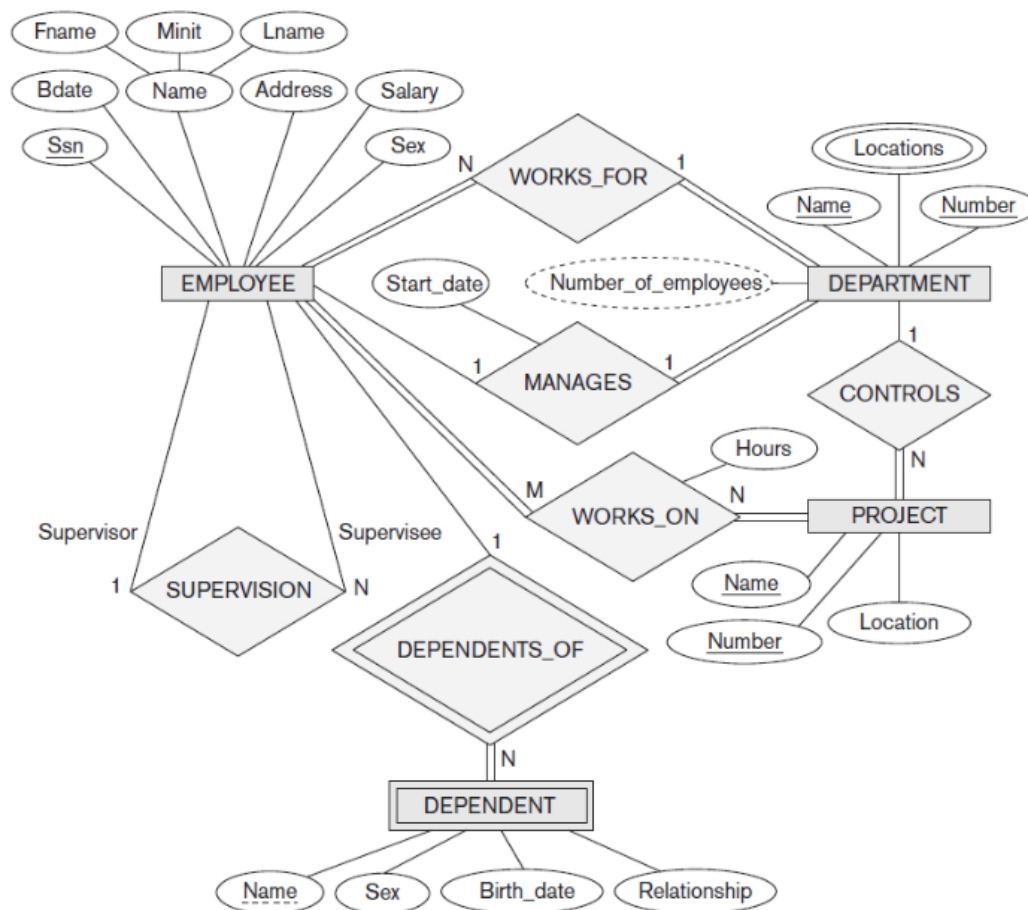What is the maximum degree of relations that exists in the diagram?

Figure 7.2
An ER schema diagram for the COMPANY database. The diagrammatic notation
is introduced gradually throughout this chapter and is summarized in Figure 7.14.

○ 1

◉ 2

○ 6

○ 9

Question 45   1 / 1 pts

How many recursive relations are there in the diagram?

○ 6

○ 5

○ None

◉ 1

Question 46   1 / 1 pts

The term _____ is used to refer to a row.

○ Attribute

○ Instance

◉ Tuple

○ Field

Question 47   1 / 1 pts

Which of the following levels in the Three-Schema Architecture describes the physical storage structure of the database?

○ External Level

○ Conceptual Level

○ Core Level

◉ Internal Level

Question 48   1 / 1 pts

A super key is also a candidate key under what condition?

○ No further condition needed; A super key is always a candidate key

◉ No proper subset of that super key is a super key

○ Some subset of that super key are super keys

○ All subsets of that super key are super keys

Question 49   1 / 1 pts

The degree of a relation indicates _____.

○ Number of Foreign Keys in the relation.

○ Number of Tuples in the relation

○ Number of Keys in the relation

◉ Number of attributes in its relation schema

Question 50   1 / 1 pts

Schema-based constraints are also called _____.

◉ Explicit constraints

○ Semantic constraints

○ Application-based constraints

○ Business rules

Question 51   1 / 1 pts

A candidate key that does not have a null value and is selected to uniquely identify all other attribute values in any given row is called a ____.

◉ primary key

○ superkey

○ candidate key

○ secondary key

Question 52   1 / 1 pts

In a relationship, when a primary key from one table is also defined in a second table, the field is referred to as a _____ in the second table.

○ a combined key

○ primary key

◉ foreign key

○ redundant field

Question 53   1 / 1 pts

Which of the following can be a multivalued attribute?

○ All of them can

◉ Phone_number

○ SSN

○ Date_of_birth

Question 54   1 / 1 pts

Relation schema may have more than one candidate key.

○ True

○ False

Question 55   1 / 1 pts

The Insert operation can violate any of the four types of constraints
(domain, key, entity, referential)

● True

○ False

Question 56   1 / 1 pts

Which of the following statements about keys is true?

○ All candidate keys are foreign keys

● All candidate keys are super keys

○ All foreign keys are candidate keys

○ All super keys are candidate keys

Question 57   1 / 1 pts

Which of the following data is NOT a part of metadata?

○ The list of all users in the database.

⦿ The contents of a specific table in the database

○ Database definition or descriptive information

○ The list of all tables in the database

Question 58

1 / 1 pts

The degree of a relation indicates _____.

○ Number of Tuples in the relation

⦿ Number of attributes in its relation schema

○ Number of Keys in the relation

○ Number of Foreign Keys in the relation.

Question 59

1 / 1 pts

Explicit constraints can be directly expressed in schemas of the data model

◉ True

○ False

Question 60   **1 / 1 pts**

Order of tuples in a relation is not important.

◉ True

○ False

Quiz Score: **60** out of 60