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<b>Course Name</b> : Database Systems		<b>Exam</b> : Second term Mid Exam
<b>Course Code</b> :		<b>Examiner</b> : Dr. Ahmed Shehata

Q1: Answer by completing the following table:

Question	Answer
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

- Which one of the following is a set of one or more attributes taken collectively to uniquely identify a record?
  - A. Candidate key
  - B. Sub key
  - C. Super key
  - D. Foreign key
- A \_\_\_\_\_ is a property of the entire relation, rather than of the individual tuples in which each tuple is unique.
  - A. Rows
  - B. Key
  - C. Attribute
  - D. Fields
- Course(course\_id, sec\_id, semester). Here the course\_id, sec\_id and semester are \_\_\_\_\_ and course is a \_\_\_\_\_.
  - A. Relations, Attribute
  - B. Attributes, Relation
  - C. Tuple, Relation
  - D. Tuple, Attributes
- An entity which depends on other entity for its existence is a -----
  - A. Strong Entity
  - B. Weak entity
  - C. Partial Entity
  - D. Dummy Entity
- A database server is responsible for:
  - A. Database Storage.
  - B. Data Processing Logic
  - C. Data Presentation Logic.
  - D. All of above.
- ..... is responsible for authorizing access to the database

A. DBA

B. End user

C. Sophisticated end user

D. Database developer

7. Phone number can be classified as ..... attributes.

8. The attribute AGE is calculated from DATE\_OF\_BIRTH and current\_date. The attribute AGE is called .....and can be represented by ..... In the ER diagram.

9. True or false: Each super key can be considered as a candidate key and each candidate can be considered as a primary key.

10. ----- Known facts that can be recorded and have implicit meaning

A. Data

B. Database

C. Information

D. Miniworld

Q2: For the Cinema database shown write the relational algebra to:

title	director	myear	rating
Fargo	Coen	1996	8.2
Raising Arizona	Coen	1987	7.6
Spiderman	Raimi	2002	7.4
Wonder Boys	Hanson	2000	7.6

actor	ayear
Cage	1964
Hanks	1956
Maguire	1975
McDormand	1957

actor	title
Cage	Raising Arizona
Maguire	Spiderman
Maguire	Wonder Boys
McDormand	Fargo
McDormand	Raising Arizona
McDormand	Wonder Boys

director	dyear
Coen	1954
Hanson	1945
Raimi	1959

• Find Coen's movies with the actor Cage

• Find(Actor, Director) pair where the director is older than the actor

Q3) A database is to be constructed for a football sport league where each player has: SSN, name, an address that contains Street number, City, State and set of telephones for contacting him. Each Team has an ID, Name, Logo and a Stadium. Each Player Plays only for a Team while the Team has many players plays for it. Also each Game has an Id, Time and a result.

- 1- Design an ERD for the following and determine a primary key for each Entity
- 2- Map the Result ERD into a relational model