

Quiz 2

Name: _____

Roll Number: _____

Total Marks: 22

Time Allowed: 40 Mins

Q1: What is referential integrity and how is it represented in a relational model? (2)

Referential integrity refers to the relationship between two entities such that if there is a referential integrity from entity E1 to entity E2, an instance of E2 has to exist for an instance of E1 to exist. In the relational model, this is represented by foreign keys.

Q2: Concept in normalization of relations which is based on full functional dependency is classified as (1)

- A. fourth normal form
- B. third normal form
- C. first normal form
- D. second normal form**

Q3: If there is more than one key for relation schema in DBMS then each key in relation schema is classified as (1)

- A. prime key
- B. super key
- C. candidate key**
- D. primary key

Q4: Rule which states that set of attributes determines any of its subset is classified as (1)

- A. closure rule
- B. reflexive rule**
- C. referential rule
- D. inferential rule

Q5: Consider the following table; Apply 1st NF, 2nd NF, and 3rd NF and show the results after each NF. Also, identify primary key and foreign keys for each table_(17)

Student ID	Student Name	Student Phone	Major	Major Code	Fee Voucher ID	Fees
1	AAA	0300 123456	CS	002	44	450,000

2	BBB	0343 123456 0302 123456	ACF	005	46	400,000
3	CCC	0301 123456	LAW	009	45	400,000

Answer:

1st NF: (3+1)

- Single atomic values
- Primary Not Null

Student ID	Student Name	Student Phone	Major	Major Code	Fee Voucher ID	Fees
1	AAA	0300 123456	CS	002	44	450,000
2	BBB	0343 123456	ACF	005	46	400,000
2	BBB	0302 123456	ACF	005	46	400,000
3	CCC	0301 123456	LAW	009	45	400,000

Primary Key: Student ID + Student Phone

2nd NF:(3+3)

- In first NF
- No partial dependency (Single Primary Key)

Student Table:

Student ID	Student Name	Major	Major Code	Fee Voucher ID	Fees
1	AAA	CS	002	44	450,000
2	BBB	ACF	005	46	400,000
3	CCC	ACF	009	45	400,000

Primary Key: Student ID

Student Phone Table:

Student ID	Student Phone
1	0300 123456
2	0343 123456
2	0302 123456
3	0301 123456

Primary Key: Student ID + Student Phone

3rd NF:(5+2)

- No transitive functional dependency

Student Table:

Student ID	Student Name	Major Code	Fee Voucher ID
1	AAA	002	44
2	BBB	005	46
3	CCC	009	45

Primary Key: Student ID + Student Phone

Foreign Key: Fee voucherID and Major Code

Fee Table:

Fee Voucher ID	Fees
CS	002
ACF	005
LAW	009

Primary Key: Fee Voucher ID

Major Table:

Major	Major Code
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CS	002
ACF	005
LAW	009

Primary Key: Major Code

Student Phone Table:

Student ID	Student Phone
1	0300 123456
2	0343 123456
2	0302 123456
3	0301 123456

Primary Key: Student ID + Student Phone

Foreign Key: StudentID