

Duration: 2 hours

Max Marks: 60

Instructions:

- 1) Start each question on a fresh page.
- 2) Figures to the right indicate maximum marks.
- 3) All questions are compulsory.

Q1. (A) Answer the following.

5 x 1 =5

1. Give any one point of difference between Network and Hierarchical Data model.
2. What is an Entity?
3. What is a Candidate Key?
4. What is a recursive relationship?
5. Give one point of difference between simple attribute and composite attribute.

Q1. (B) State whether the following statements are True or False.

5 x 1 =5

1. Entity Relationship model helps the developers to conceptually visualise the design.
2. Generalisation is a top-down approach.
3. Non-prime attributes uniquely identify a tuple.
4. Multivalued attributes can store more than one value.
5. A table is in domain key normal form if the table has domain and key constraint.

Q2. Answer the following.

10

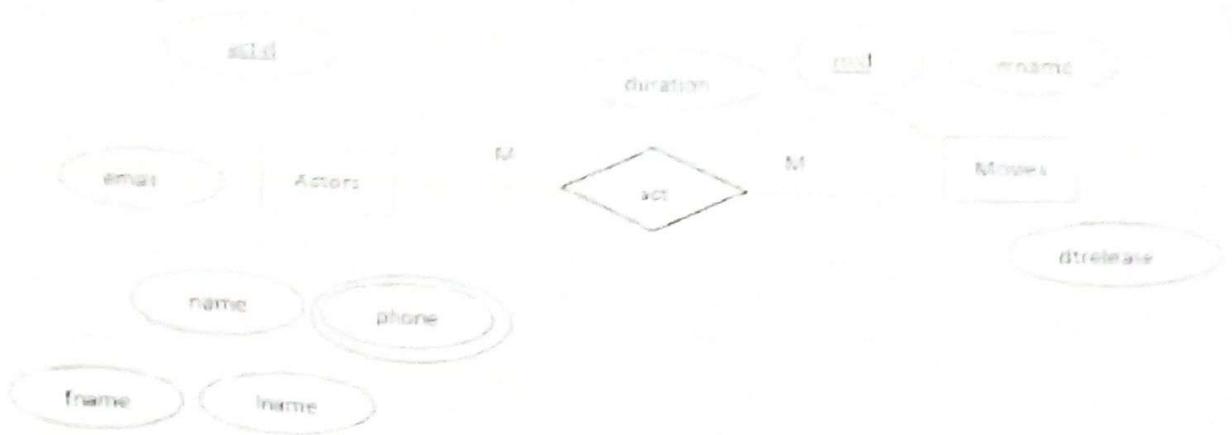
- a. What is an Object Oriented Data Model? (2)
- b. What is Aggregation ? (3)
- c. Consider the following Scenario and draw an appropriate E-R Diagram . (5)

Passengers book a ticket against payment. Passengers are identified by their Adhaar numbers, name, email, phone number and address. For security reasons more than one phone number is taken. Ticket is identified by ticket number, ticket booking date, travel date and travel time. Payment has an unique payment id, payment date and payment time.

Q3. Answer the following.

10

- a. What is a Data Definition Language and why is it used? (2)
- b. Explain the one to many and many to many cardinality ratios in DBMS with appropriate examples. (3)
- c. Convert the following ER Diagram to Tables. (5)



Q4. Answer the following.

10

- a. Define normalization. (2)
- b. State the rules for INF. (3)
- c. Define Multi-valued dependency. Identify the functional dependencies and normalize the following table upto 2NF. (5)

Student Table:

| <u>Rollno</u> | Student_name | Address | <u>Course_id</u> | Course_title |
|---------------|--------------|---------------|------------------|--------------|
| 11 | Ramesh | Margao, Vasco | 101 | DBMS |
| 12 | Riya | Panaji | 102 | COA |
| 14 | Sonam | Ponda, Verna | 101 | DBMS |

Q5. Answer the following.

10

- a. State two advantages of mobile database. (2)
- b. Define data warehouse. State any two features of data warehouse. (3)
- c. Explain any two types of anomalies with the help of an example. (5)

Q6. Answer the following.

10

- a. Define Multimedia database. (2)

- b. Explain the different types of schedules based on recoverability. (3)
- c. Explain the ACID properties of transaction. (5)

=====ALL THE BEST=====