

Vidya Vikas Mandal's  
Shree Damodar College of Commerce & Economics, Margao-Goa  
SY BCA, Semester-III, Semester End Examination, November 2022  
CAC-110 Database Management Systems

**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. How is a composite attribute modeled in a relation?
2. What are data models used for?
3. Give one point of difference between primary key and foreign key.
4. What is a ternary relationship?
5. What is a null attribute? Give an example.

**Q1.(B) State whether the following statements are True or False.****5 x 1 =5**

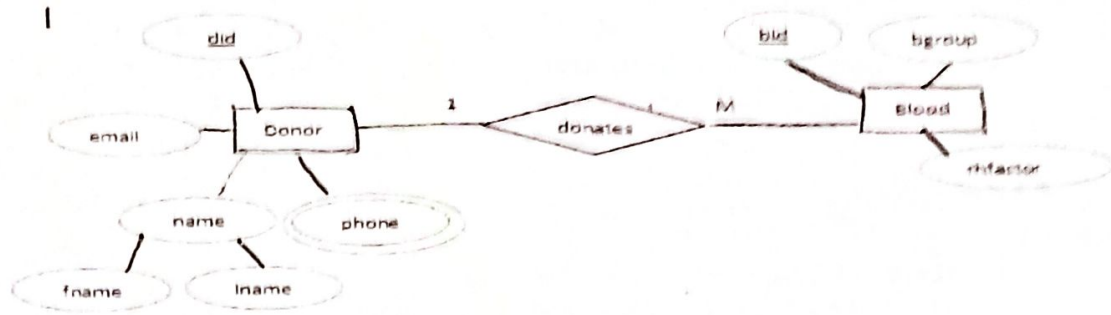
1. Normalization increases data redundancy.
2. Data definition language is used to create tables.
3. Derived attribute is stored in the relation.
4. Hierarchical data model has a parent child relationship.
5. Weak entity is denoted using double box.

**Q2. Answer the following.****10**

- a. State any 2 advantages of network data model? (2)
- b. Draw the ERD notation and identify the cardinality ratios for the following: (3)
  - i. Student enrolls for personal coaching.
  - ii. Many doctors treat many patients.
  - iii. Many employees work in a department.
- c. Explain the concept of Generalisation and Specialisation with an example each. (5)

**Q4. Answer the following.****10**

- a. What is a Database Management System? (2)
- b. Explain the concept of participation constraints using appropriate examples. (3)
- c. Convert the following ER Diagram to Tables. (5)

**Q4. Answer the following.**

10

- Define BCNF. (2)
- State three benefits of normalization. (3)
- Define Partial dependency. Identify the functional dependencies and normalize the following table upto 3NF. (5)

Employee Table:

<u>Empid</u>	Emp_name	Emp_state	Emp_city	<u>Proj_id</u>	Proj_name
351	Roshan	Goa	Margao	501	Project1
352	Tina	Karnataka	Bangalore	504	Project2
353	John	Maharashtra	Pune	505	Project3

**Q5. Answer the following.**

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- List two applications of Genome database. (2)
- Define Distributed Database. State any two advantages of using Distributed Database system. (3)
- Explain 2NF with the help of an example. (5)

**Q6. Answer the following.**

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- Define Mobile database. (2)
- Explain the Atomicity and Durability property of a transaction. (3)
- Define Two phase locking protocol. Explain the different states of a transaction. (5)

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