

Goa Vidyaprasarak Mandal's

**GOPAL GOVIND POY RAITURCAR COLLEGE OF COMMERCE AND ECONOMICS
PONDA - GOA**

B.C.A. CBCS (SEMESTER- III) EXAMINATION, NOVEMBER 2022

DATABASE MANAGEMENT SYSTEM

Duration: 2 hours

TotalMarks: 60

Instructions: i) All questions are compulsory.

ii) Figures to the right indicate full marks.

Q1.A) Fill in the blanks:

(5*1=5)

A) The process of converting the requests into results between internal, external and conceptual levels in three-schema architecture is called _____.

B) _____ is the collection of interrelated multimedia data that includes text, graphics images, animations, video, and audio.

C) _____ is a collection of conceptual tools for describing data, data relationships, data semantics and consistency constraints.

D) An entity in set X is associated with at most one entity in set Y, and an entity in Y is associated with at most one entity in X is called _____.

E) In Project Join Normal Form, joining should be _____.

Q1.B) Answer the following:

(5*1=5)

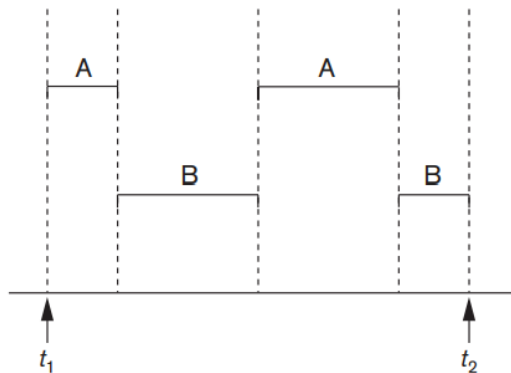
A) What is a Homogeneous Distributed Database?

B) What is Knowledge Database?

C) Identify the following type of non-serial schedule

T1	T2
R(A)	
W(A)	
	W(A)
	R(A)
COMMIT	
	COMMIT

D) Check if the following Transaction is interleaved.



E) State Referential Integrity Rule.

Q2. Answer the following:

- A) What are the features of a Mobile database? (2)
- B) Briefly explain the Super key, Primary key and Candidate key. Give an example for each. (3)
- C) What is File Processing System? Explain any four drawbacks of the File Processing System with examples. (5)

Q3. Answer the following:

- A) A College database contains information about the teachers (identified by a teacher ID) and subjects (identified by a subject ID). Draw an ER diagram for each teacher who teaches exactly

onesubject. (2)

B) Explain Relational Data Model in detail. (3)

C) Explain 2NF and 3NF with examples and also draw dependency diagrams. (5)

Q4. Answer the following:

A) State the conditions of 4NF and check if the following table is in 4NF. (2)

Course	Instructor	Textbook
BCA	A	DBMS
BCA	B	ANDROID
BCA	C	
BCOM	D	E-COMMERCE
BCOM	D	ACCOUNTING

B) Consider the Relation R(ABCDE) and the functional dependencies are as follows:

A->B

D->E

Find the candidate key. (3)

C) Explain different types of attributes in ER model with a suitable example for each. (5)

Q5. Answer the following:

A) Explain the good decomposition with an example. (2)

B) Briefly explain insert, delete and update anomalies with examples. (3)

C) Define transaction. Discuss Atomicity and Consistency with diagrams. (5)

Q6. Answer the following:

A) State any four advantages of the Network Data Model. (2)

B) Differentiate between a strong entity set and a weak entity set. (3)

C) Draw an ER diagram of the Railway Reservation System for ABC Transport Services, with the following details: (5)

P.T.O

- 1) It will keep the information about all the Transporters like their Name(First Name, Middle Name, Last Name), City, Mobile numbers, and Addresses.
- 2) It will keep the information about the services provided by ABC Transport like Source, Destination, Arrival time, Departure time, Date, and Fare on which this railway service is provided.
- 3) It will keep the information about all the Travellers like Name, Address, and Mobile Number.
- 4) It will keep information about all the services that ABC Transport owns like the Capacity, Model_number, Manufacturer, and License Number.
