

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(MID SEMESTER EXAMINATION)

CLASS: BCA  
BRANCH: BCA

SEMESTER: III  
SESSION: MO/2022

SUBJECT: CA203 DATABASE MANAGEMENT SYSTEMS

TIME: 2 HOURS

FULL MARKS: 25

**INSTRUCTIONS:**

1. The total marks of the questions are 25.
  2. Candidates attempt for all 25 marks.
  3. Before attempting the question paper, be sure that you have got the correct question paper.
  4. The missing data, if any, may be assumed suitably.
  5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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		CO	BL
<del>Q1</del> (a) Differentiate between physical data independence and logical data independence.	[2]	CO1	BL1
<del>Q1</del> (b) Discuss three schema architecture of database with a neat diagram.	[3]	CO1	BL2
<del>Q2</del> (a) What are the different database Languages?	[2]	CO1	BL1
Q2 (b) What are the responsibilities of DBA?	[3]	CO1	BL1
<del>Q3</del> (a) Explain weak entity set with example.	[2]	CO2	BL2
<del>Q3</del> (b) What are the different types of relationship? Explain with example.	[3]	CO2	BL2
<del>Q4</del> (a) Explain with example, primary key and foreign key concepts.	[2]	CO2	BL2
<del>Q4</del> (b) Differentiate between Generalisation and Specialisation.	[3]	CO2	BL2
<del>Q5</del> (a) What is normalization?	[2]	CO3	BL1
Q5 (b) Explain the pitfalls in database design with example.	[3]	CO3	BL2

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BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(END SEMESTER EXAMINATION MO/2022)

CLASS: BCA  
BRANCH: BCA

SEMESTER : MO/2022  
SESSION : MO/2022

SUBJECT: CA203 DATABASE MANAGEMENT SYSTEMS

TIME: 03 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
  2. Attempt all questions.
  3. The missing data, if any, may be assumed suitably.
  4. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates
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- ~~Q.1(a)~~ What is database and database system? [2] •
- ~~Q.1(b)~~ What are the responsibilities of a DBA? [3] •
- ~~Q.1(c)~~ Compare file processing system and database management system. [5] •
- ~~Q.2(a)~~ What is the concept of weak entity used in the data modeling? [2] •
- ~~Q.2(b)~~ Draw an ER diagram of airline reservation system database. [3] •
- ~~Q.2(c)~~ What do you mean by degree of relationship? Discuss with diagrammatic representation about various types of degree of relationships. [5] •
- ~~Q.3(a)~~ What is normalization? [2] •
- ~~Q.3(b)~~ Explain Armstrong's Axioms of Functional Dependency. [3] •
- ~~Q.3(c)~~ Define BCNF. How does it differ from 3NF? Why is it considered a stronger form than 3NF? [5] •
- ~~Q.4(a)~~ What is query processing? [2] •
- ~~Q.4(b)~~ Explain SELECT and JOIN operations. [3] •
- ~~Q.4(c)~~ Discuss any five rules for transformation of query trees. [5] •
- ~~Q.5(a)~~ What are the different types of Locks? [2] •
- ~~Q.5(b)~~ What is deadlock? How can a deadlock be avoided? [3] •
- ~~Q.5(c)~~ Draw a state diagram and discuss the typical states that a transaction goes through during execution. [5] •

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