

- N.B. : (1) Question No 1 is Compulsory.  
(2) Attempt any three questions out of the remaining five.  
(3) All questions carry equal marks.  
(4) Assume suitable data, if required and state it clearly.

- 1** Attempt any FOUR **[20]**
- a) List the ACID properties. Explain the usefulness of each.
  - b) Explain the Hierarchical Model in detail.
  - c) What are the advantages of DBMS over file system?
  - d) What are Foreign Key Constraints?
  - e) Explain E-R Model in detail.
  - f) Explain DDL, DML & DCL commands in SQL with its examples
- 2 a** Explain different between the term serial schedule and Serializable Schedule **[10]**  
with suitable example
- b** State and explain the twelve codd's rules relational database **[10]**
- 3 a** What is Normalization? Explain 1NF, 2NF, 3NF, and BCNF. **[10]**
- b** Explain the overall Database system architecture **[10]**
- 4 a** Write short note on cartesian product with its syntax and example **[10]**
- b** Draw an ER Diagram for Hospital management where patient take treatment from physician and also, he/she can claim a medical insurance **[10]**
- 5 a** Explain various database languages **[10]**
- b** What are views? Explain how to create a views **[10]**
- 6 a** What are the basic building blocks of data models, explain with example **[10]**
- b** Write note on OCC and Database Recovery Management **[10]**
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