

Duration: 3hrs

[Max Marks:80]

- 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 Differentiate between FPS and DBMS. [5]
 - b Explain the properties of transactions. [5]
 - c Explain joins in SQL. [5]
 - d Explain the aggregate functions in SQL with examples. [5]
 - e Differentiate between Total and Partial Participation in ER. [5]
- 2 a Design an ER diagram for a Hospital Management system and convert it into relational tables. [10]
b Explain different relational algebra operators with examples. [10]
- 3 a Explain the functional dependency and types of functional dependencies with a suitable example. [10]
b Describe the overall architecture of DBMS with a suitable diagram. [10]
- 4 a What is the need of normalization? Explain 1NF, 2NF and 3 NF with examples. [10]
b What is Deadlock? How to avoid deadlock? [10]
- 5 a Explain the different constraints in SQL. [10]
b Explain the different EER features with suitable examples. [10]
- 6 a Explain conflict and view Serializability. [10]
b Explain the Log based recovery mechanism. [10]
