Duration: 3 Hours **[Max Marks:80]**

N.B.: (1) Question No 1 is Compulsory.
(2) Attempt any three questions out of the remaining five.
(3) Figures in the right margin indicate the marks.

1		Attempt any **FOUR**	**[20]**
	a	List the significant differences between file processing and DBMS.	**[5]**
	b	What is meant by logical data independence? Explain with examples.	**[2+3]**
	c	Explain the different levels of abstraction.	**[5]**
	d	Write a short note on data base administrator	**[5]**
	e	What is a view? Explain its advantages	**[2+3]**
2	a	Explain various data models used in DBMS	**[10]**
	b	What is a business rule? Explain with examples what is mapping cardinality	**[3+7]**
3	a	Explain the degree of relationship sets. Explain the different types of entities.	**[5+5]**
	b	Explain the E-R model in brief with a suitable example with suitable notations.	**[10]**
4	a	Explain the features of a good relational database design. Explain what is meant by normalization and its necessity.	**[6+2+2]**
	b	i.)Draw an E-R diagram for an online book shop which should consist of entity set, attribute, relationship, mapping cardinality and keys. It will maintain information about all customers, books, book author, publisher, billing etc. ii).Draw an E-R diagram for a hospital management system where patient take treatments from physician and he/she can claim health insurance.	**[5+5]**
5	a	Explain 1NF and 3NF with suitable examples? Explain why BCNF in stronger than 3NF.	**[7+3]**
	b	State and explain the twelve Codd's rules for relational databases. Describe the conceptual model of UML with suitable diagrams.	**[5+5]**
6		Attempt any **FOUR**	
	a	Define with examples i) Super Key ii) Candidate Key iii) Primary Key iv) Foreign Key	**[5]**
	b	Explain entity integrity and referential integrity with suitable examples.	**[5]**
	c	Write a short note on BCNF.	**[5]**
	d	Write a short note on Query processor.	**[5]**
	e	Explain the concept of JOIN operation in relational algebra.	**[5]**
