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**R13** 

Code No: 813AP

## JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD MCA III Semester Examinations, February - 2021 DATABASE MANAGEMENT SYSTEMS

Time: 2 hours Max.Marks:60

## Answer any five questions All questions carry equal marks

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2.a) Discuss about participation constraints and weak entities in ER model.  b) Write a brief introduction to the relational model. [6+6]  Explain in detail about relational algebra operations with suitable examples. [12]  What is schema refinement? Explain motivating examples of schema refinement. [12]  Explain about 3NF, 4NF and 5NF with suitable examples. [12]  Discuss about transaction support in SQL-92.  Explain concurrency control without locking. [6+6]  Write a brief introduction on crash recovery.  Describe analysis phase in detail. [6+6]  Explain the following:  a) The memory hierarchy  b) Extendable hashing versus linear hashing. [6+6]	1.a)	What are levels of abstraction in a DBMS? Explain.	
b) Write a brief introduction to the relational model. [6+6]  3. Explain in detail about relational algebra operations with suitable examples. [12]  4. What is schema refinement? Explain motivating examples of schema refinement. [12]  5. Explain about 3NF, 4NF and 5NF with suitable examples. [12]  6.a) Discuss about transaction support in SQL-92. [6+6]  b) Explain concurrency control without locking. [6+6]  7.a) Write a brief introduction on crash recovery. [6+6]  b) Describe analysis phase in detail. [6+6]  8. Explain the following: [6+6]  a) The memory hierarchy [6+6]  b) Extendable hashing versus linear hashing. [6+6]	b)	Explain class hierarchies in ER model with examples.	[6+6]
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