

R09

Code No: 54013

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech II Year II Semester Supplementary Examinations, August/September - 2022
DATABASE MANAGEMENT SYSTEMS
 (Common to CSE, IT)

Time: 3 hours

Max. Marks: 75

Answer any five questions
All questions carry equal marks

- 1.a) Define database management systems? Differentiate file system with data base management systems.
- b) Draw an ER diagram for banking system taking into account at least four entities and use appropriate keys and constraints. [7+8]
- 2.a) Consider the following relations
 Student (Std_Name, Std_Rno, Avg_Marks, Branch)
 Fees (Std_Rno, Fee_Paid, Fee_Due)
 Represent the following using relational algebra.
 i) Display the students record whose Avg_Marks is greater than 60. (From Student Relation)
 ii) Display the students list whose fees due in between 5000 and 10000 (from Fees Relation)
 iii) Display the Std_Name and Branch from Student Relation
 iv) Display the Std_Name and Std_Rno sort by ascending order of Avg_Marks.
- b) Describe the following terms:
 i) Table view
 ii) Symbols used in relational algebra
 iii) Integrity constraints
 iv) Domain relational calculus. [8+7]
- 3.a) Discuss various types of join operations with an example.
- b) What is a SQL trigger explain with suitable examples? [7+8]
- 4.a) Write the advantages and disadvantages of normalization. Explain first normal form with a suitable example. Check whether the following Student relation is in first normal form or not, if not convert into First normal Form.

Name	Rno	Address	Mobile Nos
Sam	12	Texas, USA	9XXXXXXXX 8XXXXXXXX
Alice	14	Chicago, USA	7XXXXXXXX 6XXXXXXXX

- b) What is Boyce code normal form? Explain with a suitable example. [8+7]

- 5.a) What is deferred update recovery technique and how it used in database recovery?
b) What is indexing? Explain Hash based indexing and tree based indexing. [7+8]
- 6.a) What is two phase locking? Describe with the help of a suitable example.
b) Explain aggregate and comparison operators of SQL with suitable examples. [7+8]
- 7.a) Explain the different types of database end users. Discuss the main activities of each.
b) Explain B+ Trees with a suitable example. [7+8]
- 8.a) What is meant by nested queries, explain with suitable example.
b) What is meant by multi valued dependency? Explain 4NF with an example. [7+8]

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