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**SRINIVASA RAMANUJAN INSTITUTE OF TECHNOLOGY**

**MODEL QUESTION PAPER**

**SRIT R19**

**(AUTONOMOUS)**

II B. Tech I Sem – Semester End Examinations – Regular – Mar 2021

**DATA BASE MANAGEMENT SYSTEMS**

**[194GA05301]**

**(Computer Science and Engineering)**

**Time: 3 hours** **Max. Marks: 70**

**PART-A**

(Compulsory Question)

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| --- | --- | --- | --- | --- |
| 1 |  | | Answer the following: (10 X 02 = 20 Marks) | |
|  | a) | | Define DBMS. | |
|  | b) | | What is a Data Model? | |
|  | c) | | What is union compatibility? | |
|  | d) | | Define Tuple Relational Calculus. | |
|  | e) | | What are the properties of decompositions? | |
|  | f) | | Define weak and strong entity sets. | |
|  | g) | | Draw the state diagram of the transaction. | |
|  | h) | | State Thomas’ write rule. | |
|  | i) | | Differentiate open hashing and closed hashing (overflow chaining). | |
|  | j) | | What is MTTF? | |
| **PART-B**  (Answer all five units, 5 X 10 = 50 Marks) | | | | |
|  | | | | |
| **UNIT-1** | | | | |
| 2 | a) | Describe the components of Storage Manager and Query Processor. | | **[5M]** |
|  | b) | What are the applications of Database Systems explain? | | **[5M]** |
| OR | | | | |
| 3 | Explain the advantages of using a DBMS over File Processing System. | | | **[10M]** |
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| **UNIT-2** | | | | |
| 4 | Illustrate set and set Comparison operators in SQL with example. | | | **[10M]** |
|  |
| OR | | | | |
| 5 | Employee(person\_name, street, city)  Works(person\_name, company\_name, salary)  Company(company\_name, city)  Using the above relational database express the following queries in relational algebra notations.   1. Find the names of all employees who works for “First Bank Corporation” 2. Find the names and cities of residence of all the employees who work for “First Bank Corporation”   Find the names, street address, and cities of residence of all employees who work for “First Bank Corporation” and earn more than $10,000. | | | **[10M]** |
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| **UNIT-3** | | | | |
| 6 | Define BCNF. How does BCNF differ from 3NF? Explain with an example | | | **[10M]** |
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| OR | | | | |
| 7 | Explain in detail about relationships, relationships sets, and its cardinalities | | | **[10M]** |
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| **UNIT-4** | | | | |
| 8 | What is serializability? Demonstrate view serializabilty and conflict serializabilty with an example. | | | **[10M]** |
| OR | | | | |
| 9 | Explain storage structure and their access methods in detail. | | | **[10M]** |
|  |
| **UNIT-5** | | | | |
| 10 | Explain about B+ - tree file organization with its data structure, search and deletion operations. | | | **[10M]** |
|  |
| OR | | | | |
| 11 | Explain hash based indexing and tree based indexing with their data structures and indices. | | | **[10M]** |
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