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Question Paper Code: 53206

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2018

Third Semester

Computer Science and Engineering

15UCS306 – DATABASE SYSTEM CONCEPTS

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. The overall design of the database is called _____ CO1-R
(a) Instance (b) Schemas (c) Data Independence (d) DBA
2. Which of the following column properties would be used to specify that cells in a column must contain a monetary values CO2-U
(a) Data type (b) Null Status (c) Default value (d) Data Constraints
3. Locking may cause which of the following problem CO3-U
(a) Erroneous update (b) Deadlock (c) Versioning (d) Transaction log
4. The fastest read/write time and most efficient data storage of any disk array type is CO4-R
(a) RAID 0 (b) RAID 1 (c) RAID 2 (d) RAID 3
5. Which of the following improves a query's processing time CO5-R
(a) Write complex queries (b) Combine a table with itself
(c) Query one query with another (d) Use compatible data type

PART – B (5 x 3= 15Marks)

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| 6. | What is a data model and List out its types? | CO1- R |
| 7. | Write a SQL query to find the title of books with author name and country published in year 2018. | CO2- App |
| 8. | List out the ACID properties? | CO3- R |
| 9. | What cause of bucket overflow in the file organization? | CO4- R |
| 10. | What are the steps to measure the query cost? | CO5-U |

PART – C (5 x 16= 80Marks)

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| 11. | (a) Draw a neat E-R diagram for Railway Reservation System by applying all types of attributes and keys. | CO1- App | (16) |
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Or

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| | (b) With the block diagram explain the architecture of a DBMS | CO1-U | (16) |
| 12. | (a) (i) Explain about Inference rules for functional dependencies | CO2-U | (10) |
| | (ii) Describe about the BoyceCodd Normal Form | CO2-U | (6) |

Or

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| | (b) (i) Write a SQL statement to find out the number of orders booked for each day and display it in such a format like "For 2001-10-10 there are 15 orders". | CO2-App | (4) |
| | (ii) Write a SQL statement to display all customers, who are either belongs to the city New York or had a grade above 100. | CO2-App | (4) |
| | (iii) Write a query to create a view to keeping track the number of customers ordering, number of salesmen attached, average amount of orders and the total amount of orders in a day. | CO2-App | (4) |
| | (iv) Write a query in SQL to display the full name (first and last), the phone number and email separated by hyphen, and salary, for those employees whose salary is within the range of 9000 and 17000. The column headings assign with Full_Name, Contact_Details and Remuneration respectively. | CO2-App | (4) |

13. (a) Explain in detail about locking protocol. CO3-U (16)
Or
(b) Describe the role of serializability in concurrency control CO3-U (16)
14. (a) With neat diagram explain RAID. CO4-U (16)
Or
(b) (i) Explain about types of order indexes CO4-U (8)
(ii) How B+ tree index file work with its children CO4-U (8)
15. (a) Describe the overview of Query Processing CO5- U (16)
Or
(b) How Query optimization are applied in transformation of CO5-App (16)
relational expression.

