BACHELOR OF COMPUTER APPLICATIONS (C.B.C.S.) (2014 COURSE)
B.C.A. Sem-I : WINTER : 2021
SUBJECT: DATABASE MANAGEMENT THEORY

Day : Tuesday
Date : 11-01-2022   **W-10937-2021**

Time : 10:00 AM-01:00 PM
Max. Marks: 100

N. B. :
1) Attempt **Any FOUR** questions from **Section – I** and Attempt **Any TWO** questions from **Section - II**
2) Answers to both the section should be written in the **SEPARATE** answer books.
3) Figures to the right indicate **FULL** marks.

SECTION - I

Q.1   What is DBMS? Explain how DBMS is different from file system.   **(15)**

Q.2   What is transaction? Explain ACID properties of transaction with suitable example.   **(15)**

Q.3   Discuss the following relational operators :   **(15)**
     i) Select   ii) Project   iii) Union

Q.4   What is deadlock? Explain deadlock detection method in detail.   **(15)**

Q.5   What are different file indexing technique? Discuss any two with example.   **(15)**

Q.6   Discuss how Serizability can be achieved in database.   **(15)**

Q.7   Write short notes on **Any THREE** of the following :   **(15)**
   a) Shadow paging
   b) Role and responsibility of DBA
   c) Primary key
   d) Checkpoints

SECTION - II

Q.8   Kautilya University Research Group publishes an analysis of all journal papers to Physics, Chemistry and Mathematics. Each paper may have more than one author and appear in only one journal. Journal are identified by publisher details, titles, volumes and issue number. One issue contains many papers of many subjects. Each paper contains series of references of their papers. Authors contribute to many papers appearing in varieties of journals. Draw E.R. diagram for Kautilya University.   **(20)**

Q.9   A movie production house produces various types of movies like documentary, educational entertainment. One movie is directed by one director. Many actor/ actress work in that movie. Actors/ Actress give their dates of availability to the director. One actor/actress can work in many movies at a time. Record related to expected budget and expected release date is maintained by house. One movie may be shown in many theaters with many shows. Normalize the above database upto 3NF.   **(20)**

Q.10   Discuss difference data modeling techniques.   **(20)**

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