

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)**

**CLASS: M.Tech
BRANCH: CS**

**SEMESTER : II
SESSION : SP/19**

SUBJECT: CS511 ADVANCED DATABASE MANAGEMENT SYSTEM

TIME: 3 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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- Q.1(a) What is a schedule? Define the concepts of recoverable, cascadeless and strict schedules and compare them in terms of their recoverability. [5]
- Q.1(b) What is serializability? Explain view serializability. Discuss how serializability is used to enforce concurrency control in a database system. [5]
- Q.2(a) Discuss granularity of data items and multiple granularity locking. [5]
- Q.2(b) Explain two phase locking protocol and its variations. How does it guarantee serializability? [5]
- Q.3(a) Discuss the deferred update recovery technique for both single-user and multi-user environment. [5]
- Q.3(b) What do the terms steal/no-steal and force/no-force mean with regard to buffer management for transaction processing? [5]
- Q.4(a) Discuss what is meant by the following terms : degree of homogeneity of a DDBMS, degree of local autonomy of a DDBMS, Federated DBMS, distribution transparency. [5]
- Q.4(b) What are the advantages of DDBMS? What additional functions does a DDBMS have over a centralized DBMS? [5]
- Q.5(a) Define these terms: Star schema, Snowflake schema, Fact constellation and Data marts. [5]
- Q.5(b) Describe the characteristics of a data warehouse. Divide them into functionality of a warehouse and advantages users derive from it. [5]

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