

A - 965

**B. Sc. (Third Year) EXAMINATION,
March/April-2023**

COMPUTER SCIENCE

Paper-I

Data Base Management System

Time : Three Hours

Maximum Marks : 40 (For Regular Students)

Minimum Pass Marks : 33%

Maximum Marks : 50 (For Private Students)

Minimum Pass Marks : 33%

नोट- सभी प्रश्न हल कीजिए। प्रश्न क्रमांक 1 अनिवार्य है।
Attempt all questions. Question No. 1
is compulsory.

1. निम्नलिखित में से किन्हीं पाँच प्रश्नों के उत्तर दीजिए।
प्रत्येक प्रश्न के अंक समान हैं। $5 \times 2 = 10$
Attempt any five of the following
questions. Each question carries equal
marks.

P.T.O.

- (i) Field, record, file को परिभाषित कीजिये।
Describe the terms : field, record, file.
- (ii) Metadata को Database Management
Systems में परिभाषित कीजिये।
Describe Metadata in Database
Management Systems.
- (iii) Traditional file approach के मुख्य हानि
क्या हैं ?
List out the main disadvantages of a
traditional file approach.
- (iv) Text files और Database files में अंतर
लिखिये।
Mention the differences between text
files and Database files.
- (v) Weak और Strong entity set में अंतर की
व्याख्या कीजिये।
Explain the difference between weak
and strong entity set.
- (vi) Cordinality of a relation in Database
को समझाइये।
Describe the cordinality of a relation
in Database.

- (vii) SQL में DROP TABLE Command को समझाइये।

Describe the DROP TABLE Command in SQL.

- (viii) Database Design में Normalization की आवश्यकता को समझाइये।

Describe the need for normalization in Database design.

- (ix) दो sets of attributes के बीच में functional dependency को समझाइये।

Describe functional dependency between two sets of attributes.

- (x) SQL में Boolean data type को समझाइये।
Explain the Boolean data type in SQL.

इकाई-I

(Unit-I)

2. Database Administrator के कार्यों को समझाइये।
तीन स्तरीय Database architecture तथा इसके उद्देश्य को समझाइये। 6/8

Explain the functions of a Database Administrator. Explain the three level database architecture and its objectives.

अथवा

(Or)

Physical और logical data independence के अंतर को समझाइये। Database languages को समझाइये तथा विभिन्न प्रकार की Database languages का वर्णन कीजिये।

Explain the difference between physical and logical data independence. Discuss Database languages explaining the different types of database language.

इकाई-II

(Unit-II)

3. एक उदाहरण के द्वारा Composite तथा derived attribute को ER Model में समझाइये। इस तथ्य को एक Suitable diagram से समझाइये। 6/8

Using an example explain composite and derived attributes in an ER Model. Draw suitable diagram to illustrate the concept.

अथवा

(Or)

एक hospital का ER-diagram का चित्रण कीजिये जिसमें Set of patients तथा set of medical

doctors हों। प्रत्येक patient के साथ log of the various tests तथा examinations conducted संलग्न करें।

Construct an E-R diagram for a hospital with a set of patients and a set of medical doctors. Associate with each patient a log of the various tests and examinations conducted.

इकाई-III
(Unit-III)

4. Relational algebra में निम्नलिखित operations को समझाइये- 6/8

- (i) SELECT
- (ii) PROJECT
- (iii) RENAME

Explain the following operations in relational algebra-

- (i) SELECT
- (ii) PROJECT
- (iii) RENAME

अथवा

(Or)

Relational algebra में निम्न terms को विभिन्न कीजिये-

Primary Key, Candidate Key, Super Key तथा Foreign Key.

Distinguish the following terms in relational algebra-

Primary Key, Candidate Key, Super Key and Foreign Key.

इकाई-IV

(Unit-IV)

5. Relational database schema को समझाइये। Insert, Delete और Update anomalies को समझाइये।

6/8

Discuss relational database schema. Discuss insert, delete and update anomalies.

अथवा

(Or)

BCNF (Boyce-Codd Normal Form) को समझाइये। BCNF तथा 3NF के अंतर को समझाइये। Discuss BCNF (Boyce-Codd Normal Form). Explain the difference between BCNF and 3 NF.

इकाई-V

(Unit-V)

6. Closed तथा Open hashing के अंतर को समझाइये। प्रत्येक Hashing Technique के relative merits को Database applications के अन्तर्गत समझाइये।

6/8

Explain the distinction between closed and open hashing. Discuss the relative merits of each technique in database applications.

अथवा

(Or)

Primary index तथा secondary index के अंतर को समझाइये। Dense index के लाभ को समझाइये।

Illustrate the difference between a primary index and a secondary index. List some advantages of dense index.