# BRAINWARE UNIVERSITY

## Term End Examination 2023
## Programme – B.Sc.(HN)-Hons-2018/B.Sc.(ANCS)-Hons-2020/B.Sc.(ANCS)-Hons-2021
## Course Name – Database Management System
## Course Code - BHN303/BNCSC302
## ( Semester III )

**Full Marks : 60** **Time : 2:30 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

### Group-A
(Multiple Choice Type Question) 1 x 15=15

1. *Choose the correct alternative from the following :*

(i) Name the item that represents the raw facts and figures of information.
a) Data b) Information
c) SQL d) None of these

(ii) Name the term that is used to represent data about data
a) Father data b) Meta data
c) All data d) None of these

(iii) Identify which of the following is NOT a basic element of all versions of the E-R model?
a) Entities b) Attributes
c) Relationships d) Primary Key

(iv) Identify the type of language containing Grant and Revoke statements
a) DDL b) TCL
c) DML d) DCL

(v) Identify the correct term used to represent where the physical storage structure of devices could be changed without affecting the conceptual schema
a) Physical Data Independence b) Logical Data Independence
c) External Data Independence d) None of these

(vi) Predict the correct nature of Primary key as
a) Null b) Unique
c) duplicate d) None of these

(vii) Choose the correct option that describes Data
a) Raw fact and figure b) Metadata
c) Design Plan d) None of these

(viii) Select the appropriate option for the tuple that is divided into fields and it derives its data from
a) Relations b) Domains

c) Queries
d) All of the above

(ix) Select the term for "Execution of translation in isolation preserves the _____ of a database"

a) Atomicity
b) Consistency
c) Durability
d) All of the above

(x) Classify a table with row and column

a) Table
b) Relation
c) Tuple
d) Attribute

(xi) Select the term used to define overall design of the database

a) Schema
b) Application Program
c) Data Definition Language
d) Code

(xii) Select the property / properties of a database is / are

a) It is an integrated collection of logically related records
b) It consolidates separate files into a common pool of data records
c) Data stored in a database is independent of the application programs using it
d) All of these

(xiii) Select the type of operator is Cartesian Product

a) A unary Operator
b) A binary operator
c) a ternary operator
d) None of these

(xiv) Solve the SQL statement and infer on the correct option: SELECT * FROM employee WHERE salary>10000 AND dept_id=101;

a) Salary, dept_id
b) Employee
c) Salary
d) All the field of employee relation

(xv) Infer and select on the correct function to obtain a specified day of the month for a given date

a) DATEPART
b) DAY
c) GETDATE
d) CURRENT_TIMESTAMP

## Group-B

(Short Answer Type Questions) 3 x 5=15

2. Compare and Contrast Network and Relation Model (3)

3. Differentiate between the terms Data and Information (3)

4. Explain functional dependency with example (3)

5. Explain about Loss Less Join Decomposition (3)

6. Write a short note on Dependency Preserving Decomposition (3)

**OR**

Write a short note on Indexing (3)

## Group-C

(Long Answer Type Questions) 5 x 6=30

7. Define Data Abstraction, discuss levels of Abstraction and describe data independence (5)

8. Differentiate between Entity, Relations and Attributes in an E-R model. Draw an E-R diagram of Online Marketplace with at least 5 Entities. (5)
9. Discuss about different types of Data models with suitable examples and diagrams (5)
10. Summarize the different constraints used in SQL with suitable examples (5)
11. Explain and illustrate the different types of DBMS architecture (5)
12. Explain about Selection, Projection, Rename, division and Cartesian product operations in relational algebra (5)

**OR**

Explain in detail about Serializability (5)

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