

U.G. 4th Semester Examination - 2022**BCA****[HONOURS]****Course Code : BBCACCHC 401****Course Title: Data Base Management System**

Full Marks : 30

Time : 2 Hours

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*

1. Answer any **ten** questions: 1×10=10
- a) Define Indexing.
 - b) Write the characteristics of Data Warehousing.
 - c) What are DCL commands in SQL?
 - d) Differentiate DBMS and RDBMS.
 - e) What do you mean by 'identifying relationship'?
 - f) What is data dictionary?
 - g) What is meant by transitive dependency?
 - h) Differentiate between data and information.
 - i) What do you mean by Cloud Database?

- j) Differentiate between single-valued attribute and multi-valued attribute.
- k) What is the main difference between physical schema and logical schema in database?
- l) Write the difference between client/server DBMS and distributed DBMS.
- m) Why normalisation is necessary in DBMS?
- n) State the role of DBA.
- o) Define BCNF.

2. Answer any **five** questions: 2×5=10
- a) Explain 'Durability' property in database transaction.
 - b) What do you mean by insertion and deletion anomaly?
 - c) Differentiate between weak entity set and strong entity set with suitable example.
 - d) Write two application of Data Mining.
 - e) Define Foreign Key with example.
 - f) How we can deal with hashing collision?
 - g) What is bucket overflow?
 - h) Discuss B+ tree in multilevel indexing.

3. Answer any **two** questions: $5 \times 2 = 10$

a) Draw an ER diagram on 'Hospital Management System' and demonstrate the following:

i) Entity

ii) Single and Multiple attribute

iii) Stored and Derived attribute

iv) Partial key

v) Identifying relationship

b) Given a relation $R = \{A, B, C, D\}$ and the corresponding set of FDs:

$F = \{A \rightarrow BC, B \rightarrow C, A \rightarrow B, AB \rightarrow C\}$.

Minimize the set of FDs. 5

c) Explain 'Difference' and 'Natural Join' relational algebraic operations with example.

$$2\frac{1}{2} + 2\frac{1}{2}$$
