Roll No. .....

Total No. of Questions : 09] [Total Pages : 08

(2035)

2501299

UG (CBCS) (Second Year) (Annual)

EXAMINATION, 2025

B.Sc. (COMPUTER SCIENCE)

Database Management System

COMP202Th

Time : 3 Hours] [*Maximum Marks : 50*

The candidates shall limit their answer precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt *Five* questions in all. Q. Nos. 1 in Part A is compulsory. Attempt *one* question from each of Parts B, C, D, and E.

Part A

(Compulsory Question)

1. (a) Attempt all parts : 1×10

(i) In the.....normal form, composite attribute is converted individual attributes.

(1) First

(2) Second

(3) Third

(4) Fourth

(ii) Which of the following gives logical structure of the database graphically ?

(1) Entity-relationship diagram

(2) Entity diagram

(3) Database diagram

(4) Architectural representation

(iii) Which of the following is used to denote the selection operation in relational algebra ?

(1) Pi (Greek)

(2) Sigma (Greek)

(3) Lambda (Greek)

(4) Omega (Greek)

(iv) An entity set that does not have sufficient attributes to form a primary key is termed a :

(1) Strong entity set

(2) Variant set

(3) Weak entity set

(4) Variable set

(v) Weak entity set is represe as.....

(1) Underline

(2) Double line

(3) Double diamond

(4) Double rectangle

(vi) Which type of data can be st in the database ?

(1) Image oriented data

(2) Text, files containing data

(3) Data in the form of audio video

(4) All of the above

(vii) The language used for writing qu is :

(1) SQL

(2) DBTG

(3) System R

(4) Database

(viii) A query is used to :

(1) extract information from database

(2) create entities

(3) create storage space

(4) None of the above

(ix) DML is a language that allows :

(1) to add new rows

(2) to define data and their relationships

(3) to grant privileges

(4) None of the above

(x) Self join :

(1) join two copies of same table

(2) copies the table

(3) join two copies of different table

(4) None of the above

(b) Answer the following in 25 to 50 wo each : 5×4=

(i) What is the role of DBA ?

(ii) How user requests for required da is handled by DBMS ?

(iii) What is Scheme ?

(iv) How the attributes of the entitie are converted into the relationa form ?

(v) What is referential integrity in DBMS ?

Part B

2. What are the problems of manual database ? What is the solution of that problems ? What are the different types of database end users ? 5

3. Explain three level architecture. What are its objectives ? 5

Part C

4. Illustrate the concept of attributes and its types. Develop an ER diagram for library management system. 5

5. Explain the following terms with examples : 5

   (i) Attribute

   (ii) Degree

   (iii) Tuple

   (iv) Cardinality

   (v) Integrity rules.

Part D

6. Explain the role of relational algebra ? What are different types of relational operators ? Explain traditional and special operators. 5

P.T.O.

7. Solve the following on the given database :

S(Sno, Sname, City, Status)

P(Pno, Pname, color, Weight)

SP(Sno.Pno, Quantity)

(a) Create the above table by identifying appropriate primary key and foreign key

(b) Get suppliers name where city is "Amritsar".

(c) Get the total quantity supplied by "S2". 5

Part E

8. Explain the following with example : 5

(i) Aggregation

(ii) Specialization,

9. What are the objectives to normalize the data ? Explain different techniques. 5