This question paper contains 2 printed pages. Roll No. .....

B.C.A. (Pt. - II) **Data. Mana. Sys.**

204/234

B.C.A. (Part - II) EXAMINATION, 2021

(Faculty of Science)

(Three - Year Scheme of 10+2+3 Pattern)

DATABASE MANAGEMENT SYSTEM

Time Allowed : Three Hours Maximum Marks : 100

No supplementary answer-book will be given to any candidate. Hence the candidates should write their answers precisely in the main answer-book only.

All the parts of one question should be answered at one place in the answer-book. One complete question should not be answered at different places in the answer-book.

Write your roll number on question paper before start writing answers of questions.

*Question paper consists of **three** parts. **All three** parts are **compulsory**.*

PART - A : *(Very short answer) consists of **10** questions of **two** marks each. Maximum limit for each question is upto **40** words.*

PART - B : *(Short answer) consists of **5** questions of **four** marks each. Maximum limit for each question is upto **80** words.*

PART - C : *(Long answer) consists of **5** questions of **twelve** marks each with an internal choice.*

PART - A

1. (a) Define database. **10x2=20**
   (b) What is mean by data independance ?
   (c) Define attributes and entities.
   (d) What is mean by aggregation ?
   (e) What is mean by data recovery ?
   (f) Define transactions.
   (g) What is SQL ?
   (h) Define views.
   (i) Define distributed database.
   (j) What is mean by object database ?

PART - B

2. (a) Discuss the Database system v/s File system. **5x4=20**
   (b) Discuss the various types of keys.
   (c) Explain Boyce Codd Normal Form with examples.
   (d) Discuss the Aggregate functions with examples.
   (e) What is mean by concurrency control ? Discuss the concurrency control in distributed databases.

PART - C

3. (a) Discuss the architecture of DBMS. **6+6**
   (b) Discuss the role of database administrator.

OR

   (a) Explain the advantages and disadvantages of DBMS. **10+2**
   (b) What is mean by data independance ?

4. (a) Discuss the fundamental operations of relational algebra. 8+4
(b) Discuss the generalization and aggregation.

OR

Write short notes on : 4+8
(a) Mapping constraints
(b) E-R Model

5. Discuss the functional dependencies, access control, backup, recovery and maintenance. 12

OR

Discuss the various Normal Forms with examples. 12

6. (a) Explain SQL Data types. 5+7
(b) Discuss the insert, update and delete operations with examples.

OR

Write short notes on : 4+4+4
(a) Characteristics of SQL
(b) Types of SQL commands
(c) Join, Union and Intersection in SQL

7. (a) Explain object oriented databases. 6+6
(b) Discuss Distributed Query Processing.

OR

Write short notes on : 6+3+3
(a) Object Oriented data model
(b) Object Relational databases
(c) Distributed Transactions

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This question paper contains 3 printed pages] Roll No

Sl.No. **234**

B.C.A. (Part. II)

B.C.A. (Part - II) EXAMINATION, 2017
(Faculty of Science)
(Three-Year Scheme of 10 + 2+ 3 Pattern)
Paper - 234
DATABASE MANAGEMENT SYSTEM

Time : Three Hours] *[Maximum Marks : 100*

Answer of all the questions (short answer as well as descriptive) are to be given in the main answer -book only. Answers of short answer type questions must be given in sequential order. Similarly all the parts of one question of descriptive part should be answered at one place in the answer-book. One complete question should not be answered at different places in the answer-book. Write your roll numbers on question paper before start writing answers of questions.

Part I: *(Very short Answer) consists of 10 questions of two marks each. Maximum limit for each question is up to 40 words.*

Part II: *(Short answer) consists of 5 questions of four marks each. Maximum limit for each question is up to 80 words.*

Part III: *(Long answer) consists of 5 questions of twelve marks each with internal choice.*

PART - I

Q1) a) List any four advantages of using a DBMS.

b) What is a schema?

c) What is an E-R Diagram?

d) Differentiate between super key and candidate key.

e) What is a transaction?

f) What is Join statement?

P.T.O.

g) What is sub query?

h) Why normalization is required?

i) How transaction is committed in a distributed system?

j) What is ODL?

PART - II

Q2) a) Differentiate between Logical and Physical data independence. **[4]**

b) What is aggregation? Give example. **[4]**

c) Explain the structure of SQL SELECT statement. **[4]**

d) What is access control? **[4]**

e) What do you mean by concurrency control? **[4]**

PART - III

Q3) Define DBMS. What are the advantages of DBMS over conventional file processing system? What are the functions of a database administrator? **[2+6+4]**

OR

Explain the rules defined by Codd that are necessary for any DBMS to be considered as a RDBMS. **[12]**

Q4) Differentiate between following: **[3×4=12]**

a) Strong and Weak entity

b) Referential and Domain integrity

c) Single valued and multi valued attributes

OR

What is relational algebra? Explain different types of join and aggregate operations of relational algebra. Give appropriate examples.

[2+10]

Q5) Explain normalization & its different forms. Give appropriate examples. **[12]**

OR

Describe backup and recovery mechanisms available in DBMS.

Q6) Write SQL queries for the following: **[12]**

Consider the table SPORTS having fields: (RollNo, Class, Name, Game, Grade)

a) Display the names of the students who have grade 'C' or grade 'D'.

b) Display the grade of the students whose name starts with 'D'

c) Display the different games offered.

d) Display the Roll number and name of the student who belong to class '7' and plays hockey.

e) Delete the student record whose roll no. is 101.

OR

Explain the data types availabale in SQL. Also explain various aggregate functions in SQL with suitable examples.

Q7) Explain the following: **[12]**

a) Distributed Transactions

b) Object-relational Databases

OR

Define object databases. Describe persistent programming languages. What are the several approaches proposed to make the objects persistent?

This question paper contains 2 printed pages.

B.C.A. (Part - II)

234 **Data. Mana. Sys.**

B.C.A. (PART II) EXAMINATION - 2018

(Faculty of Science)

(Three-year Scheme of 10 + 2 + 3 Pattern)

Paper - 234

(Database Management System)

Time allowed : Three Hours

Maximum Marks : 100

PART - I: (Very Short Answer) consists of 10 questions of 2 marks each. Maximum limit for each question is up to 40 words.

PART - II: (Short answer) consists of 5 questions of 4 marks each. Maximum limit for each question is up to 80 words.

PART - III: (Long answer) consists of 5 questions of 12 marks each with internal choice.

PART - I

1. (a) Give any four drawback of file System.
   (b) What is mean by data independance?
   (c) What is mean by candidate Key?
   (d) Define Schema.
   (e) What is mean by Transactions?
   (f) Define Access control.
   (g) Define views.
   (h) What is mean by Aggregate functions?
   (i) Define concurrency control.
   (j) Give four features of Object Oriented Databases. [10 x 2 = 20]

PART - II

2. (a) Discuss the architecture of DBMS.
   (b) Write a note on Generalization and aggregation.
   (c) What is mean by boyce codd NF? Explain.
   (d) Write a note on types of SQL commands and SQL operators.
   (e) Write a note on Object-Relational Databases. [5 x 4 = 20]

PART - III

3 (a) Discuss the advantages and disadvantages of DBMS.

(b) Define Instances. 10+2

OR

Write short notes on-

(i) Database Administrator

(ii) Data Base System v/s File System 6+6

4. (a) Discuss Entity Relational Model with example.

(b) What is mean by mapping constraints? 9+3

OR

Write short notes on-

(i) Operations of Relational Algebra

(ii) Keys 6+6

5. (a) Explain 1st, 2nd and 3rd normal forms with example.

(b) What is mean by Backup and Recovery? 8+4

OR

Write short notes on-

(i) Functional Dependencies

(ii) Transactions & their states.

(iii) Loss Less decomposition 4+4+4

6. (a) Discuss the characteristics and advantages of SQL.

(b) What is mean by minus in SQL? 10+2

OR

Write short notes on-

(i) SQL Data types

(ii) Aggregate Functions

(iii) Tables and Indexes 4+4+4

7. (a) Discuss Distributed Query Processing.

(b) Explain Object-Oriented Data Model. 6+6

OR

Write short notes on-

(i) Object-Oriented Databases

(ii) Distributed Transactions

(iii) Persistend Programming Languages 4+4+4