BCA(III) — 304

2019

Time : 3 hours

Full Marks : 80

Candidates are required to give their answers in their own words as far as practicable.
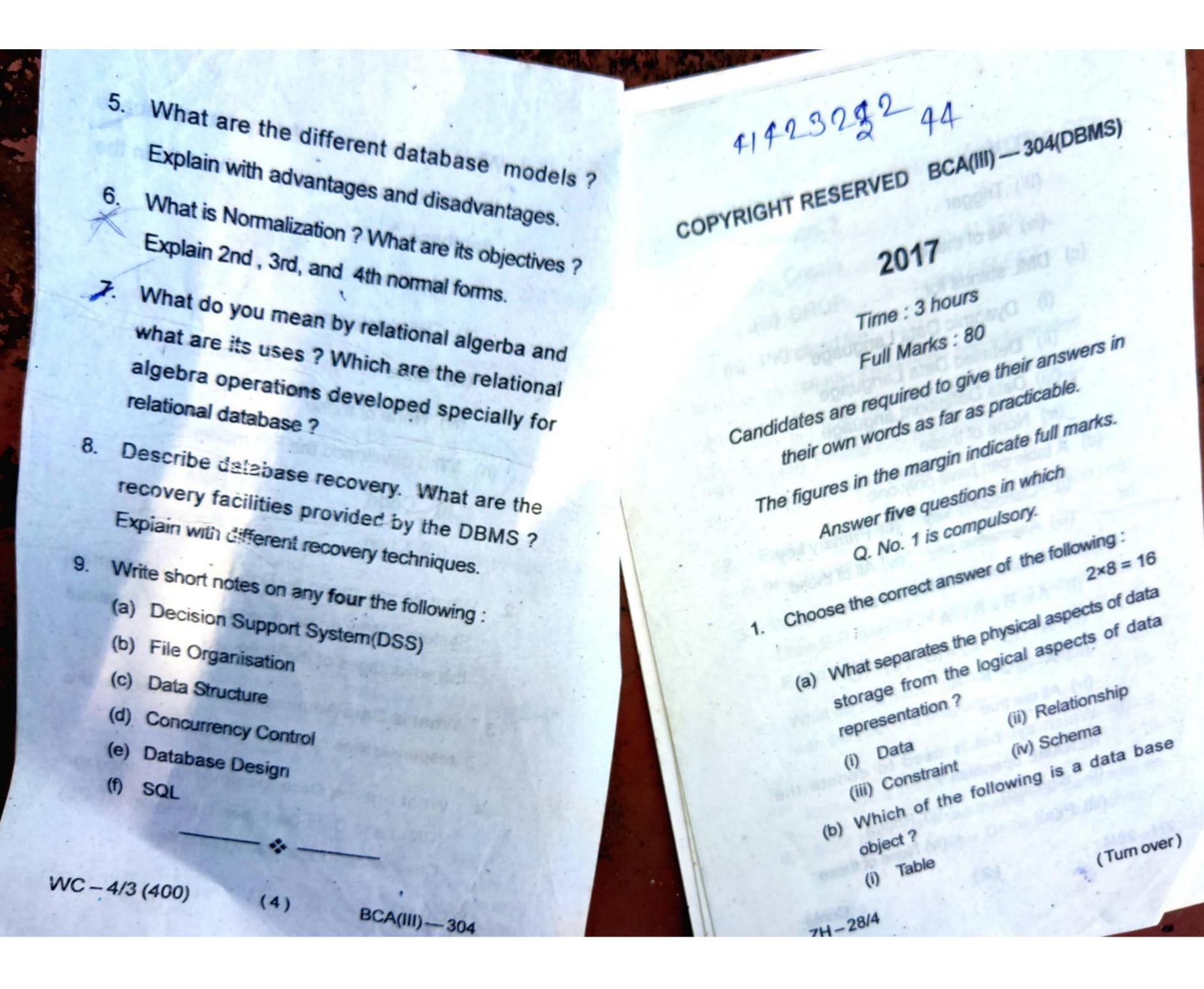
The questions are of equal value.

*Answer **five** questions in which*

Q. No. 1 is compulsory.

1. Choose the correct alternative of the following :

   (a) Which of the following is an advantage of a database ?

      (i) Reduction in redundancy

      (ii) Avoidance of inconsistency

      (iii) Secuirty enforcement

      (iv) All of these

   (b) Which of the following is a database elements ?

      (i) Data

WC – 4/3   (Turn over)

(ii) Relationship

(iii) Constraints and Schema

(iv) All of these

(c) In a relational model, relations are termed as :

(i) Tuples   (ii) Attributes

(iii) Tables   (iv) Rows

(d) The database schema is written by :

(i) HLL   (ii) DML

(iii) DDL   (iv) DCL

(e) In an ER-diagram attributes are represented by :

(i) Rectangle   (ii) Square

(iii) Ellipse   (iv) Triangle

(f) Which of the the following is not a deadlock handling strategy ?

(i) Deadlock Prevention

(ii) Time out

(iii) Deadlock detection and recovery

(iv) Deadlock annihilation

(g) What is the name of the system database that contains description of the data in the database ?

(i) Metadata

(ii) Data dictionary

(iii) Table

(iv) None of these

(h) Who developed the ER-model ?

(i) Codd   (ii) Date

(iii) Chen   (iv) Bachman

2. What do you mean by Database Management System ? Why do we need a DBMS ? Illustrate the advantages of the database.

3. What is Data Administration ? What are the responsibilities of a DBA ? Explain.

4. What are the Data Manipulation Language (DML) and Data Definition Lanaguage (DDL) Commands ? Explain with examples.

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2017

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Answer five questions in which
Q. No. 1 is compulsory.

1. Choose the correct answer of the following :

    2×8 = 16

    (a) What separates the physical aspects of data storage from the logical aspects of data representation ?

    (i) Data   (ii) Relationship

    (iii) Constraint   (iv) Schema

    (b) Which of the following is a data base object ?

    (i) Table

7H – 28/4

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5. What are the different database models ? Explain with advantages and disadvantages.

6. What is Normalization ? What are its objectives ? Explain 2nd , 3rd, and 4th normal forms.

7. What do you mean by relational algerba and what are its uses ? Which are the relational algebra operations developed specially for relational database ?

8. Describe database recovery. What are the recovery facilities provided by the DBMS ? Explain with different recovery techniques.

9. Write short notes on any four the following :

    (a) Decision Support System(DSS)

    (b) File Organisation

    (c) Data Structure

    (d) Concurrency Control

    (e) Database Design

    (f) SQL

_____ ❖ _____

WC – 4/3 (400)   (4)   BCA(III) — 304

(ii) View

(iii) Trigger

(iv) All of these

(c) DML stands for :

(i) Dyanmic Data Language

(ii) Detailed Data Language

(iii) Data DefinitionLanguage

(iv) None of these

(d) A table can have only one :

(i) Candidate key (ii) Primary key

(iii) Alternative key (iv) All of these

(e) Which of the following is true ?

(i) $A \cup B \neq B \cup A$

(ii) $A \cap (B \cap C) \neq (B \cap C) \cap C$

(iii) $A - B \neq B - A$

(iv) All are true

(f) Which symbol is used to denote the **RENAME** operation ?

(i) Sigma(σ) (ii) Rho(ρ)

(iii) Pi(π) (iv) None of these

(g) Which of the following is **NOT** a DDL statement ?

(i) Create (ii) ALTER

(iii) DROP (iv) SELECT

(h) PKI stand for :

(i) Public Knowledge and Information

(ii) Public Key Infrastructure

(iii) Private Key Investigation

(iv) None of these

2. Explain the elements of data base with the help of a diagram. 16

3. What are the components of E-R diagram ? Draw E-R diagram of Library using three different E-R models. 6+10 = 16

4. What do you mean by data abstraction ? Explain with the help of a diagram. 16

5. What are the Codd's Rule ? Explain physical and logical data independece. 6+10 = 16

6. AQM books is a publishing company with its headquarter in New Delhi and branches in

New York, Sydney and London. The company specializes in computer and management book. There are five general managers-Finance, Acquisition, Marketting, Printing and Administration. Each book has detail line ISBN, title, authour, number of pages, binding types etc.Design the table and normalize them. 16

7. What are nested subqueries ? Explain with examples.
16

8. Explain the following functions with suitable query :
4×4 = 16

(a) SUM( )

(b) AVG ( )

(c) MIN( )

(d) MAX( )

9. Compare Lossy-Join decomposition and Lossless Join decomposition.
16

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(4) BCA(III) — 304(DBMS)

BCA(III) — 304(DBMS)

2017

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(i) Table

(Turn over)

Scanned by TapScanner

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ZH –

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1. Choose the correct answer of the following :

    (a) Data what is processed and is relevant ?

        (i) Database

        (ii) Information

        (iii) Data

        (iv) Knowledge

    (b) Collection of interrelated data and a set of programs to access those data is :

        (i) Database

        (ii) DBMS

(Turn over)

(iii) Records

(iv) None of the above

(c) Data model is a collection of conceptual tool for describing :

(i) Data

(ii) Data Relationship

(iii) Both (i) and (ii)

(iv) None of the above

(d) In an E-R diagram the entities are represented by :

(i) A rectangular box

(ii) An ellipse

(iii) A square box

(iv) A triangle

9.

(e) Operations used to select a subset of the tuples from a relation that satisfies a selection criteria :

(i) Project

(ii) Select

(iii) Cartesian Product

(iv) Join

H-

WB – 4/3

(2)

Contd.

(f) Which one is not the constraint in SQL ?

(i) Primary key

(ii) Super key

(iii) Foreign key

(iv) Unique key

(g) Relational Algebra is :

(i) Data Definition Language

(ii) Meta Language

(iii) Procedural Query Language

(iv) Non Procedural Language

(h) A table can have only one :

(i) Primary key

(ii) Alternate key

(iii) Candidate key

(iv) None of the above

2. Do you agree that Database approach is better than File System ? Explain.

3. What do you mean by relational algebra ? Define all the operators of relational algebra.

(Turn over)

(3)

WB – 4/3

4. What do you understand by the term normalization ? What are the different normal form ? Define 1NF, 2NF and 3NF.

5. What is Database Security ? Explain the purpose of database security. Is DBA responsible for access control, how ?

6. What is Database Recovery ? Explain the forward and backward recovery.

7. What is E-R modeling ? How is it different from SQL ? Explain with diagramm. Illustrate about the different types of relationship.

8. What are the different components or functions of DBMS ? Explain.

9. Explain with example of the DDL and DML commands in relational Database.

10. Explain the following terms :
    (a) DBA — Database Administrator (DBA)
    (b) DSS — Decision Support System
    (c) RDBMS
    (d) Data Integrity

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