

2017

(4th Semester)

BACHELOR OF COMPUTER APPLICATIONS

Paper No. : BCA-402

(Database Management Systems)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(Marks : 50)

*The figures in the margin indicate full marks
for the questions*

1. (a) Describe the relational database model with the advantages and disadvantages. 10

Or

- (b) Explain logical and physical data independence and their importance in the database design. 6
- (c) Differentiate between type constraint and range constraint. 4

2. (a) What is generalization? Explain superclass and subclass entities with the help of diagram. 2+8=10

Or

- (b) Explain the entity relationship diagram conventions with the help of a neat sketch. 5
- (c) With the help of diagram, explain different concepts of a relationship. 5

3. (a) Define normal form. Discuss different types of normalization in DBMS. 2+8=10

Or

- (b) What are the main characteristics of functional dependencies? 6
- (c) Why is denormalization needed? 4

4. (a) What are different arithmetic operators in SQL? Explain with examples. 2+8=10

Or

- (b) Explain how views are created using an example. 6
- (c) Give the syntax of the UPDATE statement. Explain with an example. 4

(3)

5. (a) What is shadow paging? Explain how it is performed. 2+8=10

Or

- (b) What is the syntax of the GRANT command? Explain with some examples. 5
- (c) How are roles and privileges granted and revoked? 5

Subject Code : IV/BCA/402

Booklet No. A

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Date Stamp

To be filled in by the Candidate

DEGREE 4th Semester
(Arts / Science / Commerce /
.....) Exam., **2017**
Subject
Paper

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DEGREE 4th Semester
(Arts / Science / Commerce /
.....) Exam., **2017**

Roll No.

Regn. No.

Subject

Paper

Descriptive Type

Booklet No. B

INSTRUCTIONS TO CANDIDATES

- 1. The Booklet No. of this script should be quoted in the answer script meant for descriptive type questions and vice versa.**
- 2. This paper should be ANSWERED FIRST and submitted within 1 (one) Hour of the commencement of the Examination.**
- 3. While answering the questions of this booklet, any cutting, erasing, overwriting or furnishing more than one answer is prohibited. Any rough work, if required, should be done only on the main Answer Book. Instructions given in each question should be followed for answering that question only.**

*Signature of
Scrutiniser(s)*

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Examiner(s)*

*Signature of
Invigilator(s)*

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(4th Semester)

BACHELOR OF COMPUTER APPLICATIONS

Paper No. : BCA-402

(Database Management Systems)

(PART : A—OBJECTIVE)

(Marks : 25)

The figures in the margin indicate full marks for the questions

1. Choose the correct answer by putting a Tick (✓) mark in the brackets provided : 1×10=10

(a) A collection of data to be used by different people is called

- (i) DBMS ()
- (ii) RDBMS ()
- (iii) Database ()
- (iv) All of the above ()

(b) Which database level is the one closest to the physical storage?

- (i) External ()
- (ii) Internal ()
- (iii) Conceptual ()
- (iv) All of the above ()

(2)

(c) Which model combines the connectivity and cardinality information in a single symbol?

(i) Crow's foot ()

(ii) Rein85 ()

(iii) INDEFIX ()

(iv) IDEF1 ()

(d) Which of the following is a bottom-up approach?

(i) Specialization ()

(ii) Categorization ()

(iii) Participation ()

(iv) Generalization ()

(e) The tuple relational calculus is based on specific number of

(i) existential quantifier ()

(ii) universal quantifier ()

(iii) domain variables ()

(iv) tuple variables ()

(f) Degree of a table means the number of _____ in a table.

(i) rows ()

(ii) columns ()

(iii) domain ()

(iv) table ()

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(3)

(g) Primary key and foreign key specification can be added to or removed from a table using the _____ statement.

(i) SELECT ()

(ii) UPDATE ()

(iii) ALTER TABLE ()

(iv) DROP ()

(h) Which of the following is not a data definition language statement?

(i) ALTER ()

(ii) DELETE ()

(iii) DROP ()

(iv) CREATE ()

(i) Which of the following is not a transaction management SQL command?

(i) SELECT ()

(ii) COMMIT ()

(iii) ROLLBACK ()

(iv) SAVEPOINT ()

(j) Which of the following is a volatile storage media?

(i) Magnetic disk ()

(ii) Optical disk ()

(iii) Magnetic tape ()

(iv) Main memory ()

(4)

2. State whether the following are *True (T)* or *False (F)* by putting a Tick (✓) mark : 1×5=5

(a) The primary key value of each row in a table need not be unique.

(T / F)

(b) The GROUP BY clause is usually used with aggregate functions like SUM, AVG, MAX, MIN, etc.

(T / F)

(c) Relational algebra is not a procedural language.

(T / F)

(d) Simple attributes can be further subdivided.

(T / F)

(e) The conceptual model is dependent on both software and hardware.

(T / F)

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(5)

3. Answer the following questions : 2×5=10

(a) Differentiate between IN and BETWEEN clauses.

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(6)

(b) What is project operation? Give an example.

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(7)

(c) Why are backups important?

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(8)

(d) What is entity integrity?

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(9)

(e) What are the advantages of Database Management Systems?

G7—200/467

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