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IV/BCA/402

2017

(4th Semester)

5 3 5 19 = 32  
8 4 8 33 = 53

**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 ( )

(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 ( )

(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 :  $1 \times 5 = 5$

(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 ) ✓

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

( T / F ) ✓

( 5 )

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

(a) Differentiate between IN and BETWEEN clauses.

e (T) or  
1×5=5

in a table

( T / F )

used with  
MAX, MIN,

( T / F )

al language.

( T / F )

subdivided.

( T / F )

ndent on both

( T / F )

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( 6 )

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

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( 7 )

example.

(c) Why are backups important?

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( 8 )

X

(d) What is entity integrity?

(e) V

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( 9 )

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

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**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

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*( Turn Over )*

( 2 )

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

Or

- 3-6 (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

- 3-6 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

- 4-6 (b) Explain how views are created using an example. 6

- 2-4 (c) Give the syntax of the UPDATE statement. Explain with an example. 4

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( Continued )

( 3 )

5. (a) What is shadow paging? Explain how it is performed. 5-8  
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

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