

B.C.A. DEGREE EXAMINATION – NOVEMBER 2011
THIRD SEMESTER

REG. NO. : _____

COURSE : MAJOR CORE

PAPER : DATABASE MANAGEMENT SYSTEMS

TIME : 20 MINUTES

MAX. MARKS : 20

TO BE ANSWERED ON THE QUESTION PAPER ITSELF:

Section A (20 X 1 = 20)

I Choose the best answer:

- _____ users interact with the system without writing programs
(a) Specialized users (b) Naive users (c) Sophisticated users
(d) None of the above
- _____ converts the DML statements to normal procedure calls in the host language
(a) DML precompiler (b) query tools (c) buffer manager (d) file manger
- An attribute takes a _____ value when an entity doesnot have a value for it.
(a) Blank (b) null (c) zero (d) None of the above
- _____ is an abstraction through which relationships are treated as higher-level entities
(a) Association (b) Aggregation (c) schema (d) generalization
- A database schema along with primary key and foreign key dependencies, can be depicted pictorially by _____
(a) Flowchart (b) schema diagram (c) E-R diagram (d) None of the above
- The rename operator is denoted by
(a) r (b) ρ (c) Π (d) σ
- _____ requires that all nontrivial dependencies be of the form $\alpha \rightarrow \beta$, where α is a superkey.
(a) 1NF (b) BCNF (c) 2NF (d) None of the above
- A _____ is an association among several entities
(a) relationship (b) union (c) intersection (d) aggregate
- Collections of operations that form a single logical unit of work are called _____.
(a) Union (b) Database (c) transactions (d) None of the above

10. The updates carried out by the transaction have been written to disk _____ the transaction completes.
(a) before (b) after (c) None of the above

II Fill up the blanks:

11. _____ provide fast access to data items that hold particular values
12. A _____ constraint requires that an entity belong to no more than one lower-level entity set
13. The relational algebra expresses an insertion by _____
14. A domain is _____ if elements of the domain are considered to be indivisible units.
15. A transaction that completes its execution successfully is said to be _____

III Write True or False:

16. The relational model is at a lower level of abstraction than the E-R model.
17. Dashed ellipses represent weak entity sets in an E-R diagram
18. Aggregate functions take a collection of values and return a single value as a result.
19. We use the alter table command to add attributes to an existing relation
20. The transaction consists of all operations executed between the start transaction and end transaction

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI – 600 086
(For Candidates admitted during the academic year 2008 – 2009 & thereafter)

SUBJECT CODE: CS/MC/DB34

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COURSE : MAJOR CORE

PAPER : DATABASE MANAGEMENT SYSTEMS

TIME : 2 HOURS & 40 MINUTES

MAX. MARKS: 80

SECTION-B

(8 x 5 = 40)

I. Answer any EIGHT questions.

1. Briefly explain five main functions of a database administrator.
2. Explain the different types of attributes with example.
3. Draw the schema diagram for banking enterprise
4. What is a trigger? What are the requirements to design a trigger and what is the need for it?
5. Define fourth normal form. How it is different from BCNF?
6. Write a query to list all dogs who are male and registered or who were born before 1-june-2004 and have white in their color, from the table.

| Animal_ID | Category | Gender | Registered | Date born | Color |
|------------------|-----------------|---------------|-------------------|------------------|--------------|
| AID342 | Dog | Female | Yes | 1-june-2000 | White |
| AID343 | Bird | Female | No | 1-April-2008 | Green |
| AID345 | Dog | Male | Yes | 1-June-2004 | White |
| AID346 | Cat | Male | Null | 1-June-2004 | White |

7. Explain the aggregate functions with example.
8. List the ACID properties. Explain the usefulness of each.
9. Define Transaction and explain with an example.
10. Write short note on DDL commands

SECTION-C

(4 x 10 = 40)

II. Answer any FOUR questions.

11. Explain three levels of data abstraction with example.
12. Explain the different constraints on generalizations
13. Explain Cartesian product operation with an example.
14. Explain how different relational operations deal with null values.
15. Define BCNF with an example. When will you say a relation is in BCNF and write the decomposition algorithm.
16. Explain the different states of transaction with a neat diagram.
