

C 5159

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Name.....

Reg. No.....

**FOURTH SEMESTER B.Sc. DEGREE [SUPPLEMENTARY/IMPROVEMENT]
EXAMINATION, MAY 2016**

(UG—CCSS)

Computer Science—Core Course

CS 4B 07—FUNDAMENTALS OF DATABASE MANAGEMENT SYSTEM

(2012 Admission onwards)

Time : Three Hours

Maximum : 30 Weightage

I. Answer all *twelve* questions.

- 1 A collection of centrally controlled, integrated and logically organized data is known as _____.
- 2 _____ part of the DBMS provides interfaces with programming languages.
- 3 The ability to modify the conceptual schema without causing application programs to be rewritten is called _____.
- 4 In a DBMS, _____ facility is used for specifying database retrievals and updates.
- 5 _____ defines a set of associations among several entities from entity types.
- 6 _____ is a process of defining generalized entity type by identifying common features from given entity types.
- 7 _____ constraint states that no primary key value can be NULL.
- 8 The number of tuples in a relation is called _____.
- 9 _____ operation outputs a new relation consisting of all tuples appearing in either or both of the two specified relations.
- 10 _____ command removes tuples from a relation.
- 11 _____ normal form is based on the concept of transitive dependency.
- 12 The type of lock which allows us to perform write operation is _____.

(12 × ¼ = 3 weightage)

II. Answer all *nine* questions.

- 13 What is logical data independence ?
- 14 How can we differentiate between a primary key and a foreign key ?

Turn over

- 15 Define the terms entity and entity sets.
- 16 Define Boyce Codd Normal Form.
- 17 What is the impact of PRIMARY KEY constraint ?
- 18 Distinguish between relational algebra and relational calculus.
- 19 Write the syntax of the DML command DELETE.
- 20 Explain about the incorrect summary problem.
- 21 What is an object identifier? Explain with an example.

(9 × 1 = 9 weightage)

III. Answer any *five* questions.

- 22 What are the duties of a Database Administrator ?
- 23 Discuss join operation and division operation.
- 24 Explain about multivalued dependency.
- 25 What do you mean by a data model ? Explain about any two popular data models.
- 26 What are the possible reasons for a transaction to fail in the middle of execution ?
- 27 Discuss about ACID properties of a transaction.
- 28 Differentiate between polymorphism and dynamic binding.

(5 × 2 = 10 weightage)

IV. Answer any *two* questions.

- 29 (a) With the help of a block diagram, briefly discuss about the three level architecture of a DBMS.
(b) Write short notes on triggers and cursors.
- 30 Draw an ER diagram for an educational institution. Identify the appropriate entities, attributes and relationships.
- 31 (a) Discuss the 3NF with the help of examples.
(b) Briefly explain about main concepts used in Object Oriented databases.

(2 × 4 = 8 weightage)