

62069

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Name..... **22**

Reg. No.....

FOURTH SEMESTER B.Sc. DEGREE EXAMINATION MAY 2014

(UG-CCSS)

Core Course—Computer Science

CS 4B 07—FUNDAMENTALS OF DATABASE MANAGEMENT SYSTEMS

(2012 Admissions)

Time : Three Hours

Maximum : 30 Weightage

I. Answer *all* 12 questions :

- 1 A software package to facilitate the creation and maintenance of a computerized database is called _____.
- 2 Meta data is stored in _____ file of the database.
- 3 _____ is a person who has central control over the data and programs that access data in a DBMS.
- 4 In a DBMS, _____ facility is used to define the database conceptual schema.
- 5 The number of participating entity types determines the _____ of a relationship type.
- 6 _____ is a process of defining a set of subclass of an entity type.
- 7 _____ is a pool of values from which actual values appearing in a given column are drawn.
- 8 _____ relational operation selects tuples from a relation satisfying a given condition.
- 9 _____ facility provides a higher level declarative notation for specifying relational queries.
- 10 command of SQL enable us to remove table definitions.
- 11 If every non prime attribute A of a relation R is fully functionally dependent on the primary key of R, then R is said to be in _____.
- 12 The property which ensures changes made to the database do not result in inconsistency of data is _____.

(12 × ¼ = 3 weightage)

II. Answer all *nine* questions :

- 13 Define the terms degree, cardinality, attribute and primary key of a relation.
- 14 Define a foreign key. What is the purpose of using a foreign key ?
- 15 What is functional dependency ?
- 16 Define 3NF.

Turn over

- 17 Distinguish between database schema and database instance.
- 18 Explain INTERSECT command with syntax.
- 19 What do you mean by the term "type hierarchy" ?
- 20 Explain about dirty read problem.
- 21 Discuss the concept of encapsulation.

(9 × 1 = 9 weightage)

III. Answer any *five* questions :

- 22 Briefly explain various DDL commands with syntax.
- 23 What are the basic concepts of E-R model?
- 24 Explain about various unary relational algebraic operations.
- 25 What is normalization? What is its role in database design ?
- 26 Explain the desirable properties of a transaction.
- 27 What is two-phase locking protocol? How does it guarantee serializability ?
- 28 Briefly explain about the main concepts used in Object Oriented databases.

(5 × 2 = 10 weightage)

IV. Answer any *two* questions :

- 29 (a) What are essential components of a DBMS ? Explain.
(b) Discuss the different views and levels of architecture for a DBMS.
- 30 Write short notes on the following :
 - (a) Anomalies in a Database.
 - (b) Triggers.
 - (c) Boyce Codd normal form.
 - (d) Multi-valued dependency.
- 31 (a) With the help of a block diagram, explain about various states of a transaction.
(b) Consider the following relations :
WORKS (Pname, Cname, City)
LIVES (Pname, Street, City)
LOCATED_IN (Cname, City)
MANAGER (Pname, Mgrname)

Give an SQL DDL definition of this database with necessary integrity constraints.

(2 × 4 = 8 weightage)