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 enables us to remove table definition.

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 x ¼ = 3 weightage]

II. Answer all nine questions.

13. Define the terms degree, cardinality, attribute and primary key of a relation.

14. Define a forei9n key. What is the purpose of using a foreign key?

15. What is functional dependency?

16. Define 3NF.

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.

[9x1= 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 normalisation? What is its role in database design?

26. Explain the desirable properties of a transaction.

What is two-phase locking protocol? How does it guarantee serializability?

28. Briefly explain about the main concepts used in Object Oriented databases.

[5x2=10 weightage]

IV. Answer any two questions:

29 [a] what are the 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.

[2x4=8 weightage