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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belgaum)

Fifth Semester, B.E. - Information Science and Engineering
Semester End Examination; Dec - 2016/Jan - 2017
Data Base Management System

Time: 3 hrs   *Max. Marks: 100*

Note*: Answer **FIVE** full questions, selecting **ONE** full question from each unit.*

UNIT - I

1a.	Define the following terms: i) Data model ii) Schema iii) Metadata iv) Snapshot.	4
b.	With neat diagram, explain "three schema architectures".	8
c.	What is database? Explain the implicate properties of database.	8
2 a.	Explain the different types of attributes that occur in the ER model.	8
b.	Write an ER diagram of hospital management system. Assume your own entities (minimum 4), attributes and relations and participation constraints and cardinatily ratio.	8
c.	Define the following terms: i) Recursive relationship ii) Weak entity type iii) Atomic attributes iv) Participation role.	4

UNIT - II

3 a.	List set theory operations used in relational data model. Explain with example.	6
b.	Explain the various types of JOIN operations.	6
c.	Consider the following schema and write the relational algebra expressions for the queries given below: Suppliers (sid: integer, sname : string, address: string) Parts (pid: integer, pname : string, color : string) Catalog (sid : integer, pid : integer, cost : real) i) Find the names of suppliers who supply some red parts. ii) Find the sids of suppliers who supply some red parts or at 221 packer street. iii) Find the sids of suppliers who supply some red part and some green part.	8
4 a.	Describe the six clauses in the syntax of SQL retrieval query. Show what type of constructs can be specified in each of the six clauses. Which of the six clauses are required and which are optional?	10
b.	Briefly discuss the INSERT, DELETE, and UPDATE operations anomalies on relations.	10

UNIT - III

5 a. What is a view? Explain how to create the view and how view can be dropped? 10

  b. Explain EXISTS, NOT EXIST and UNIQUE function in SQL with an example. 10

6 a. How are triggers and assertions defined in SQL? Explain. 8

  b. Explain nested queries and correlated nested queries with an example each. 12

UNIT - IV

7 a. What is the need for normalization? Explain the first, second and third normal forms with examples. 14

  b. Explain informal design guidelines for relation schemas. 6

8 a. Define multi valued dependency. Explain 4NF with an example. 10

  b. Explain dependency preservation property of a decomposition. 10

UNIT - V

9 a. Explain the ACID properties of a database transaction. 10

  b. What is a schedule? Explain with example conflict scrializable schedule. 10

10 a. What is two-phase locking protocol? How does it guarantee serializability? 10

  b. Explain the three phases of the ARIES recovery model. 10

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