# B. Tech. IV-Sem. (Main) May - 2019
## PCC Computer Science & Engineering
## 4CS4-05 Database Management System
## CS, IT

**Time: 3 Hours**                                  **Maximum Marks: 120**

*Instructions to Candidates:*

*Attempt all ten questions from Part A, five questions out of seven questions from Part B and four questions out of five from Part C.*

*Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.*

*Use of following supporting material is permitted during examination. (Mentioned in form No. 205)*

1. NIL _____      2. NIL _____

## PART – A

**(Answer should be given up to 25 words only)**      **[10×2=20]**

**All questions are compulsory**

Q.1 What is DBMS?

Q.2 What is Entity? Explain with a suitable example.

Q.3 What is the purpose of normalization in DBMS?

Q.4 Explain the concepts of Primary key.

Q.5 What is the meaning of sub-query in terms of SQL?

Q.6 What do you mean by Referential Integrity?

Q.7 Why E-R model used in DBMS?

Q.8 Explain the role of Triggers in SQL programming.

Q.9 What is the need of serializability in transaction processing?

Q.10 What is Concurrency?

# PART – B

## (Analytical/Problem solving questions) [5×8=40]

## Attempt any five questions

Q.1 Differentiate between file system and DBMS. Explain the ternary relationship with a suitable example.

ersahilkagyan.com

Q.2 What is E-R model? What are the features of E-R model? Draw and explain E-R model for Library Management System.

Q.3 What do you mean by Null Values? Explain Dynamic SQL in detail.

Q.4 What are the difference between JDBC and ODBC?

Q.5 What is Normalization? Also explain functional dependencies with a suitable example.

Q.6 Write a short note on transaction properties and recoverable schedules.

Q.7 What is shadow paging? Explain in detail.

# PART – C

Q.1  What is embedded SQL?

Write the following queries in SQL by considering the employee data base………

(a)  Find all the employees in database who live in the same cities as the companies for which they work.

(b)  Find all the employees who earn more than the average salary.

Q.2  Explain Boyce-Codd normal form and 3-NF in detail.

Q.3  Explain the followings in detail :

(a)  Aggregation v/s ternary relationship

(b)  Entity v/s Attribute

(c)  Conflict v/s View serializability

Q.4  What is cascadeless schedule? Why is cascadeless ness of schedules desirable? Are there any circumstances under which it would be desirable to allow non-cascadeless schedules? Explain and justify your answer.

Q.5  Why must lock and unlock be atomic operations? Explain recovery related data structure in detail. Also explain deadlock handling.

-----------------------------------