

**B.TECH. SEM -V ( COMPUTER) 2014 COURSE (CBCS) :**  
**SUMMER - 2018**

**SUBJECT: DATABASE MANAGEMENT SYSTEMS**

Day: **Thursday**  
Date: **24/05/2018**

Time: **10.00 AM TO 01.00 PM**  
Max. Marks: 60

**S-2018-2337**

**N.B.:**

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat diagrams **WHEREVER** necessary.

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- Q.1** a) Differentiate between File processing system and DBMS. (06)  
b) What is Data model? State and explain it's types. (04)

**OR**

- Q.1** a) Define Data independence and it's types? Explain in detail why data independence is important. (05)  
b) Explain in detail various roles involved in Database environment. (05)

- Q.2** Construct an E-R model for Car Rental System and convert it into normalized relations. (10)

**OR**

- Q.2** Consider a relation R with 5 attributes ABCDE. Given following functional dependencies. (10)  
 $A \rightarrow B$        $BC \rightarrow E$        $ED \rightarrow A$   
List all keys for R  
i) Is R in 3NF?  
ii) Is R in BCNF?

- Q.3** a) Explain in detail Relational algebra operations. (05)  
b) With suitable examples, distinguish between super key, candidate key and primary key. (05)

**OR**

- Q.3** a) Explain in detail Integrity constraints. (06)  
b) Define Codd's rules for Relational model. (04)

- Q.4** a) What is View? State and explain types of views. (05)  
b) With suitable example distinguish between implicit and explicit cursor. (05)

**OR**

- Q.4** a) State and explain DDL, DML and DCL Commands with examples. (06)  
b) What is PLSQL? Write PLSQL block to check even number. (04)

- Q.5** a) With neat diagram, discuss various steps involved in query processing. (04)  
b) Define serializability. Explain in detail its types. (06)

**OR**

- Q.5** a) With neat sketch explain Lock based concurrency control. (06)  
b) State and explain Transaction properties. (04)

- Q.6** a) With neat diagram explain components of Data warehouse. (05)  
b) What is OLAP? State and explain its operations. (05)

**OR**

- Q.6** a) State and explain Data mining techniques. (05)  
b) What is Spatial and Geographic databases? Explain in detail. (05)