

**FACULTY OF SCIENCE**  
**B.Sc. IV-Semester (CBCS) Examination, May / June 2019**

Code No. 3126  
120917474 036

**Subject : Computer Science**

**Paper – IV (DSC) : Database Management Systems**

**Time : 3 Hours**

**Max. Marks: 80**

**PART – A (5 x 4 = 20 Marks)**

**(Short Answer Type)**

**Note : Answer any FIVE of the following questions.**

- 1 Define DBMS. Write the advantages of DBMS.
- 2 Discuss grouping operations with examples.
- 3 Explain different data types of SQL.
- 4 What is functional dependency? Explain.
- 5 Describe weak and strong entities with examples.
- 6 Write about BCNF rules.
- 7 Explain multi stamp ordering protocol.
- 8 Write about nested transactions with examples.

**PART – B (4 x 15 = 60 Marks)**

**(Essay Answer Type)**

**Note: Answer ALL from the following questions.**

- 9 (a) Describe the DBMS architecture in detail.  
**OR**  
(b) Explain fundamental operations of relational algebra with examples for each.
- 10 (a) Explain DDL, DML, DCL and TCL commands with examples.  
**OR**  
(b) Explain stored procedures and functions in PL/SQL with examples.
- 11 (a) Explain entity sets, entity types, attributes and keys with examples.  
**OR**  
(b) Describe logical database design for relational model with an example.
- 12 (a) Discuss time stamp methods for concurrency control with examples.  
**OR**  
(b) Explain various security control mechanisms.