

University Roll No.....

First Term Examination, Even Semester 2019-20

Programme: B.Tech Year: II Sem:IV

Database Management Systems: BCSC 0003

Time: 1 Hour

Maximum Marks:15

Section – A

3 x 2 = 6 Marks

- I. List four significant differences between a file-processing system and a DBMS.
- II. What is the importance of data independence in the context of DBMS? Explain with suitable examples.
- III. Enlist various categories of End Users in DBMS.

Section – B

3 x 3 = 9 Marks

- I. Construct an ER Diagram for Company having following details:
 - Company organized into DEPARTMENT. Each department has unique name and a particular employee who manages the department. Start date for the manager is recorded. Department may have several locations.
 - A department controls a number of PROJECT. Projects have a unique name, number and a single location.
 - Company's EMPLOYEE name, ssno, address, salary, sex and birth date are recorded. An employee is assigned to one department, but may work for several projects (not necessarily controlled by her dept). Number of hours/week an employee works on each project is recorded; The immediate supervisor for the employee.
 - Employee's DEPENDENT are tracked for health insurance purposes (dependent name, birthdate, relationship to employee).
- II. What are the different levels of abstraction in the DBMS? Explain each level in detail.

III. Give the following queries in the relational algebra using the relational schema:

student(id, name)
enrolledIn(id, code)
subject(code, lecturer)

- a) What are the names of students enrolled in cs3020?
- b) What are the names of students in both cs1500 and cs1200?
- c) What are the names of students taking a subject taught by Roger.