

S.Y.(comp.)

3/3

Total No. of Questions - [ 06]

Total No. of Printed Pages:02

G.R. No.

--

**MARCH 2020 INSEM (T1)**

**S. Y. B.TECH. (COMPUTER ENGINEERING) (SEMESTER -IV)**

**COURSE NAME: DATABASE MANAGEMENT SYSTEM**

**COURSE CODE: CSUA22182**

**(PATTERN 2018)**

Time: [1 Hour]

[Max. Marks: 20]

Instructions to candidates:

1. Attempt Q.1 **OR** Q.2, Q.3 **OR** Q.4, Q.5 **OR** Q.6
2. Figures to the right indicate full marks.
3. Use of scientific calculator is allowed.
4. Assume suitable data wherever required.

- Q. 1) A university registrar's office maintains data about the following entities: [8]
- (a) courses, including number, title, credits, syllabus, and prerequisites;
  - (b) course offerings, including course number, year, semester, section number, instructor(s), timings, and classroom;
  - (c) students, including student-id, name, and program; and
  - (d) instructors, including identification number, name, department, and title. Further, the enrollment of students in courses and grades awarded to students in each course they are enrolled for must be appropriately modeled.
- i) Construct an E-R diagram for the registrar's office. Document all assumptions that you make about the mapping constraints.
- ii) Construct appropriate tables for E-R diagram designed with above requirements.

**OR**

- Q. 2) Explain Specialization, Generalization and Aggregation with suitable example. [8]
- Q. 3) Explain any two operations of Relational algebra. [4]
- Explain Stored procedure with suitable example. [4]

**OR**

- Q. 4) Consider the following relational schema, [8]  
Employee(Empno, EName, DeptNo, Salary)  
Department(DeptNo, DName)  
Write SQL queries for the following questions:  
1) List Employee names of the Computer Department.  
2) Find average salary of each department.  
3) Find department name of the Employee 'ABC'.  
4) Display details of first 4 highest paid employees.

- Q. 5) Explain Third Normal Form with suitable example. [4]

OR

- Q. 6) Explain Second Normal Form with suitable example. [4]