CBCS SCHEME

15MN73

Seventh Semester B.E. Degree Examination, July/August 2021
Computer Application in Mining

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions.

1 a. Discuss about the fundamental reasons for implementing CAD. **(08 Marks)**
   b. List out the benefits of CAD and explain them. **(08 Marks)**

2 a. Explain the following with neat sketches:
   (i) CRT   (ii) Roster scan   (iii) Stroke writing **(08 Marks)**
   b. With neat sketch, explain about Central Processing Unit. **(08 Marks)**

3 a. List out the three modulus of software configuration and explain them in detail. **(06 Marks)**
   b. Explain about the functions of a graphics packages. **(10 Marks)**

4 a. Differentiate between wire frame and solid modeling. **(08 Marks)**
   b. Discuss about the applications of computer in mining industries. **(08 Marks)**

5 a. Write an algorithm to find the ultimate pit configuration. **(08 Marks)**
   b. Write an algorithm to find the equipment to handle material. **(08 Marks)**

6 a. Write an algorithm for ventilation network analysis. **(08 Marks)**
   b. Write an algorithm for blast design. **(08 Marks)**

7 a. Discuss about the database management system administrators. **(08 Marks)**
   b. Explain about the Three - Schema Architecture. **(08 Marks)**

8 a. Explain in detail the different DBMS interfaces. **(08 Marks)**
   b. Draw an E-R diagram for Bank database. **(08 Marks)**

9 a. Explain the relational algebra with unary relational operations. **(08 Marks)**
   b. Consider the following schema and write the queries in relational algebra:
       EMPLOYEE (Name, Ssn, Salary, Dno, Superssn, Bdate, Gender)
       DEPARTMENT (Dname, Pnumber, Dnum, Plocation)
       DEPT_Location (Dnos, Dlocation); WORKS_ON (Essn, Pno, Hours)
       DEPENDENT (Essn, Dependent_name, Gender)
       (i)   Retrieve name of employees who work in dept no. 5
       (ii) Retrieve list of names of each female employees dependent.
       (iii) Retrieve the names of the manager of each department.
       (iv) Retrieve the salary is greater than 25,000. **(08 Marks)**

10 a. Consider the following data and write the queries in SQL:
        EMPLOYEE (Name, Ssn, Salary, Dno, Superssn, Bdate, Gender)
        DEPARTMENT (Dname, Pnumber, Dnum, Plocation)
        DEPT_Location (Dnos, Dlocation); Works_ON(Essn, Pno, Hours)
        DEPENDENT (Essn, Dependent_name, Gender)
        i)   Retrieve the birth date and address of employees whose name is 'John Smith'.
        ii) Retrieve the name and address of all employees who works for 'Research' department.
        iii) Retrieve all employees name whose address is in Bangalore, Karnataka. **(08 Marks)**
    b. Define Normalization. Explain 1NF and 2NF. **(08 Marks)**

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