**NJR/KS/18/3226**

**Bachelor of Computer Application (B.C.A.) Semester-III (C.B.S.) Examination**

**DATABASE MANAGEMENT SYSTEM**

**Paper—II**

Time : Three Hours]        [Maximum Marks : 50

**N.B. :—** (1) **All** questions are compulsory and carry equal marks.

      (2) Draw neat labelled diagram wherever necessary.

**EITHER**

1. (a) List various models of Database and explain network model.      5

    (b) Differentiate between traditional file management system and database management system.      5

**OR**

    (c) Explain the term database processing and write short notes on :

        (i) Data Abstraction

        (ii) Data Migration.      5

    (d) Explain Hierarchical Data Model with example.      5

**EITHER**

2. (a) Construct appropriate tables for the following E-R diagram.      5
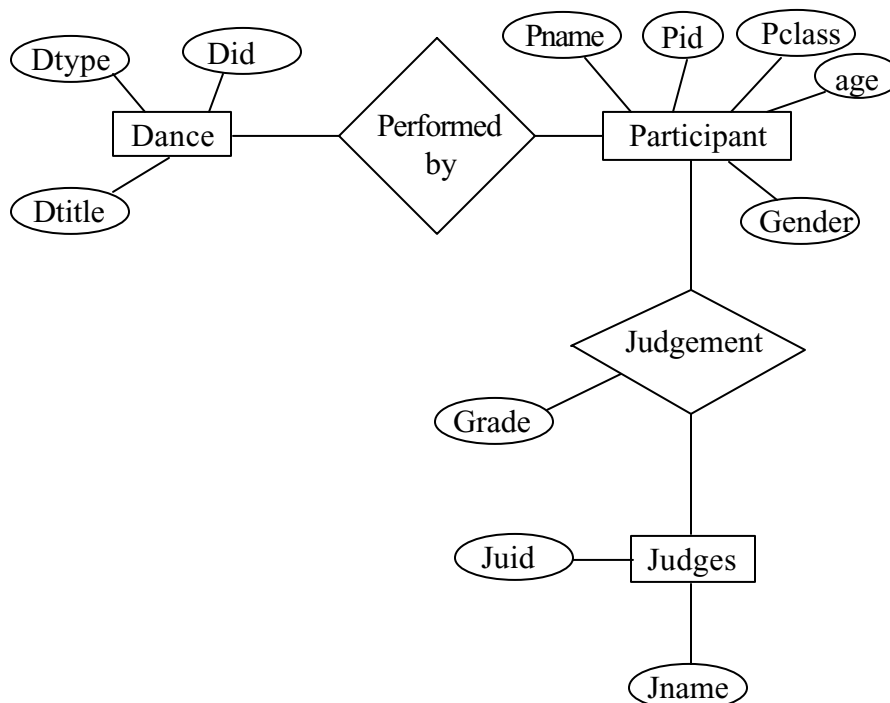


    (b) State two advantages and two drawbacks of E-R Data Model. Explain aggregation with suitable example.      5

**OR**

    (c) Write steps to develop E-R diagram.      5

    (d) Differentiate between strong entity set and weak entity set. Give suitable example to illustrate your answer.      5

**EITHER**

3.  (a)  Explain Referential Integrity. State two principal integrity rules for relational model. Discuss why it is desirable to enforce those rules. 5

    (b)  Consider the following schema of a relational database :

    Teach (name, address, course)

    Write a query (i) to find a teacher with name "ABC" teaching course "Data structure", (ii) List name and address of teachers teaching course "operating system". 5

    **OR**

    (c)  Explain join operations with suitable example. 10

    **EITHER**

4.  (a)  Distinguish between 3NF and BCNF with suitable example. 5

    (b)  Explain full functional dependency and multivalued dependency. 5

    **OR**

    (c)  Draw functional dependency diagram for the following relations :

    EMPLOYEE (ecode, ename, salary, project_no., completion date) 5

    (d)  Explain types of anomalies that may occur on a table that has redundant data. 5

5.  Attempt **ALL** :

    (a)  Explain the role of database administrators. 2½

    (b)  Explain Null and derived attributes with example. 2½

    (c)  Write a short note on aggregate functions. 2½

    (d)  What is Normalization ? Why is it needed ? 2½