No. of Printed Pages: 2

Roll No._____

DOON UNIVERSITY, DEHRADUN
Mid Semester Examination, March-2016
School of Technology

MCA (Integrated) 5 Years Program
SEMESTER-IV
Course: STM-526 [Database Management Systems]

Time Allowed: 2Hours   *Maximum Marks: 30*

Note: Question paper is divided into three sections A, B & C. Attempt all the questions. Marks distribution is given alongside. Follow the instruction as given in each section.

SECTION: A

(6*1=6)

Attempt any six of the following. Write your answer in about 50 Words.

Que-1
(i) Define DBMS
(ii) List any 3 DBMS Querying Languages.
(iii) Define Domain.
(iv) Explain QBE.
(v) Define Primary Key and Foreign Key. Also differentiate between Unique Key and Primary Key.
(vi) What is NULL Values? What are their significance in Database Design?
(vii) What is E-R Modeling?
(viii) Discuss about different types of attributes.

SECTION: B

Attempt any four of the following. Write your answer in about 250 Words.

(4*3=12)

Que-2 What do you mean by Data Abstractions? Discuss with examples.

Que-3 What is Database Constraints? Discuss all constraints in SQL with example.

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Que-4 Explain the following SQL Commands with appropriate examples
      View, Grant, Alter

Que-5 Who is a DBA? What are the responsibilities of a DBA?

Que-6 Draw an E-R diagram for Indian Railway Online Ticket Reservation System.

SECTION: C

Attempt any three of the following. Write your answer in about 750 Words.

<div align="right">(3*4=12)</div>

Que-7 Explain the following Relational Algebra construct with examples.
      (a) Selection
      (b) Projection
      (c) Aggregate Functions
      (d) Difference

Que-8 Compare the features of file system with database system in detail.

Que-9 Consider the following relational database
<div align="center">

employee (employee-name, street, city)

works (employee-name, company-name, salary)

company (company-name, city)

manages (employee-name, manager-name)
</div>

Give an expression in SQL to express each of the following queries :

    i) Find the names and cities of residence of all employees who work for XYZ Bank.
    ii) Find the names, street address, and cities of residence of all employees who work for XYZ Bank and earn more than Rs. 10,000 per annum.
    iii) Find the names of all employees in this database who live in the same city as the company for which they work.
    iv) Find the names of all employees who live in the same city and on the same street as do their managers.

Que-10 What are the pitfalls in relational database design? With a suitable explain the role of functional dependency in the process of normalization.

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