**NATIONAL SCHOOL OF BUSINESS MANAGEMENT**
**ONLINE EXAMINATION-2020 JUNE**
**BSc in SE/ MIS/CS - 17.2/18.1**
**3rd Year, 1st Semester Examination**
**27/06/2020**
**CS304.3 Advanced Database Management Systems**

## Instructions to Candidates

1) Answer all questions
2) Time allocated for the examination is three and half ($3\frac{1}{2}$) hours. This includes the time allocated for Part 1-MCQ (if any).
3) Total number of pages – Four (4)
4) Use the provided answer booklet to write your answers and upload to the LMS as a PDF file within the stipulated time. This PDF file should be saved with your index no.
5) You are required to submit the answer file within the allowed timeframe, and no additional time is provided for submissions.
6) All the submissions will be checked for plagiarism. Plagiarism, collusion, and copying are serious offences in the university and serious penalties that would be imposed.
7) You're not allowed to publish or disseminate any part of the paper online or offline.

1. Draw an EER diagram for the following given information and obtain the database schema.

   A bank is organized into branches. Each branch is located in a particular city and is identified by a unique name. Each branch maintains its assets.

   Bank customers are identified by a unique customer Identification Number. The branch stores each customer's Name, Address and Telephone number. Customers may have accounts and can take loans. A customer may be associated with an employee, who may act as a loan officer or personal banker for that customer.
   Employees are identified by their Employee Numbers. The branch stores the Employee Number, name, address and telephone no of each employee. The branch also keeps track of the employee's start date and the length of the employment.

   Each branch offers two types of Accounts: Savings and Current Accounts. Each account is assigned a unique Account Number. An account can be held by more than one customer, and a customer can have more than one account. The branch maintains a record of each customer's balance and the most Recent Date on which the account was accessed. Savings Accounts are having an Interest Rate and Current Accounts are having Overdrafts.

   A loan is given at a particular branch. A loan is granted to one or more customers and a customer can get more than one loan. A loan has a number. For each loan, the bank keeps track of the Loan Amount and the Loan Payments. The Date and the Payment is recorded for each payment.

   (State your own assumptions if any) (15 Marks)

2.

   a. Briefly explain what a view is.
   b. Write two advantages of using a View
   c. Consider the following table 'employee_info'. Write a view to display the emp_name, telephone, and the email of all employees whose address is Colombo.

| Emp_ID | Emp_Name | Address | Telephone | email |
|---|---|---|---|---|
| SR123 | Suresh | Colombo | 0115445000 | smith@gmail.com |

d. Explain the usage of 'Commit' & 'Rollback' with real time examples ? (8 Marks)

3.

a. Consider the following tables of an insurance database. Construct the following SQL queries for this relational database.

person (driver-id, name, address)
car (license, model, year)
accident (report-number, date, location)
owns (driver-id, license)
participated (driver-id, car, report-number, damage-amount)

i) Find the total number of people who owned cars that were involved in accidents in 2004.

ii) Find the number of accidents in which the cars belonging to "Tharaka" were involved.

iii) Delete the Mazda belonging to "S Khan". (6 Marks)

b. A schema describing Theatres, Cities (where they are located) and the Shows are defined as follows:

CITY (Name, State, Country)

THEATRE (Name, City, State, Capacity)

SHOW (Title, Artist, Hall, Attendance)

Write the following queries in SQL

i. Find the names of the artists who performed before at least 5000 people, together with the cities where those performances took place.
ii. Find all states in India where Mr. X has performed.
iii. List all the artists who never played in Colombo.
iv. Find the name of theatres in Kandy whose capacity exceeds 5000. (6 Marks)

4.

Create a Stored procedure with cursor in oracle to display SNO, Marks of the records in the Following Table?

Student

| SNO | Name | Marks |
|---|---|---|
| | | |

a) Using the Oracle function calculate the average marks of the above table?

b) Create a Package with a function to delete a specific record from the above table (With argument) and include a procedure to insert record?

c) Create a trigger to display message when the student table encounters with a delete or insert?

(15 Marks)