National Institute of Technology Goa

Department of Computer Science & Engineering
B.Tech   Online Internal Test September-2020

Course Name: Database Systems   **Couse Code: CS301**

Date: 29-9-2020   **Time: 10.00 -11.00 AM**   **Max Marks: 25**

ANSWER ALL THE QUESTIONS

1. Define Database. Discuss any four databases with necessary example.

2. Give the Component Models of a DBMS and their interfaces with necessary block diagram.

3. What are the different roles of database administrator and database designer?

4. What is a database model? Discuss the different database models with necessary example.

5. Consider the insurance database of Fig.1 whose primary key are underlined. Construct the relational algebra for the relational database.
   a) Find the total number of people who owned that were involved in accident 2020.
   b) Find the number of accidents in which the car belonging to "Arvind" was involved.
   c) Add a new accident to the database. Assume suitable values for required attributes.
   d) Delete the Audi-4 belonging to the "Nishal".

> Person   (<u>Driver_id#,</u>   Name,   Address)
>
> Car   (<u>License,</u>   Model,   Year)
>
> Accident   (<u>Driver_id#,   License)</u>
>
> Participated   (<u>Driver_id#,</u>   Car,   Report_number)
>
> ### Fig.1

----------------------------- ALL THE BEST-------------------------------