B.E. II (Information Technology) March 2021 Class Test – I (ITR4C4: Database Management Systems)

Duration – 70min. MM - 20

Note: Take the assumptions wherever necessary. Attempt all part of a question in one place.

Q.1 Develop an ER diagram for the below requirement analysis and also explain each step involved in it:

"A Country Bus Company owns a number of busses. Each bus is allocated to a particular route, although some routes may have several busses. Each route passes through a number of towns. One or more drivers are allocated to each stage of a route, which corresponds to a journey through some or all of the towns on a route. Some of the towns have a garage where busses are kept and each of the busses are identified by the registration number and can carry different numbers of passengers, since the vehicles vary in size and can be single or double-decked. Each route is identified by a route number and information is available on the average number of passengers carried per day for each route. Drivers have an employee number, name, address, and sometimes a telephone number."

Q.2

productID INT	productCode CHAR(3)	name VARCHAR(30)	quantity INT	price DECIMAL(10,2)
1001	PEN	Pen Red	5000	1.23
1002	PEN	Pen Blue	8000	1.25
1003	PEN	Pen Black	2000	1.25
1004	PEC	Pencil 2B	10000	0.48
1005	PEC	Pencil 2H	8000	0.49

Consider the above relation **Product** and write the mysql query for the following:

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- (1) Display *productCode*, *name* and *maximum quantity* of each *productCode*.
- (2) Modify the field name (or attribute) *price* to *productPrice*.
- (3) Display the *productCode* and *name* of product where quantity is less than the average quantity.
- (4) Display the table in increasing manner of *price*.
- (5) Display the table where *productID* is more than and equal to 1003.
- (6) Replace the data in *name* field from *pencil 2B* to *pencil HB*.
- **Q.3** Differentiate between the following with an example: -
 - (1) Degree: Cadinality
 - (2) 2-Tier architecture: 3-Tier architecture
 - (3) Hierarchical model: Network Model
 - (4) GUI: Speech Input and Output Interface