Special End-Term Examination- ONLINE MODE
(CBCS/Non-CBCS)(SUBJECTIVE TYPE)
<Programme Name _B.Tech__> <__3___ SEM>
(Feb, 2022)

Subject Code:< BIT 201 >	Subject: < Database Management Systems >
Time : 1 Hour 15 minutes	Maximum Marks : 30

Note: Q. 1 is compulsory. Attempt any one question from the rest.

Q1		(5*3=15)
	(a) What do you mean by Functional Dependency? Discuss with suitable example.	
	(b) What are the problems caused by Data redundancies? Can data redundancies be completely eliminated by using Database approach? Explain with the help of example.	
	(c) Explain different types of keys with example. Differentiate between super key, candidate key, primary key and foreign key with a suitable example.	
Q2		(7.5+7.5= 15)
	(a) Draw an ER diagram for The Book Club. It has members to whom the books are sold. The books are made available at different places in the city-called Book Club Chapter to make it easy to members. The books are identified by a book _id, the author and the publisher. An author can write more than one book and a book can have more than one author. Members have information such as Membership _id, Name, Phone# and status. A member can place more than one order. Choose additional attributes for the schema that seems appropriate. Mention any assumptions you make. Show minimum and maximum cardinality ratios based on the assumptions.	
	(b)
1. What is a concurrent transition? What are the problems associated with concurrency? (4)

2. Write the steps to convert E-R model to Relational model. (3) | |
Q3		(7.5+7.5= 15)
	(a) Consider the following MAILORDER relational schema describing the data for a mail order company.
PARTS(Pno, Pname, Qoh, Price, Olevel)
CUSTOMERS(Cno, Cname, Street, Zip, Phone)
EMPLOYEES(Eno, Ename, Zip, HireDate)
ZIP CODES(Zip, city)
ORDERS(One, Cno, Eno, received, Shipped)
ODETAILS(Ono. Pno. Qty)
The attribute names are self-explanatory:
Qoh stands for quantity on hand. Specify the following queries using Relational Algebra:
1. List the name of parts that costs less than Rs. 200 (1.5)
2. List the name and cities of employees who have taken orders for parts costing more than Rs.500 (2)
3. List the name of customers who have ordered parts from employees living in Mumbai. (2)
4. List the name of customers who have placed exactly two orders. (2)	
	(b)
1. What is a two phase locking protocol? How does it guarantee serializability?   (3.5)
2. Describe deadlock with suitable example and also explain the wait - die and wound -wat scheme for deadlock prevention. (4)	