Total no. of Pages: 02 *Roll no.....*

Supplementary Exam **Feb-2019**

Fifth Semester **B.Tech.OEC**

CO361 Database Management System

Duration: 3 Hrs. **Max Marks: 50**

NOTE: Attempt all the questions. Assume the missing data if any.

Q1.Given the relational schemas: (2.5x4)

ENROLL(s#, c#, section) – s# represents student number

TEACH (prof, c#, section) – c# represents course number

ADVISE (prof, s#) – prof is thesis advisor of s#

PRE_REQ(c#, pre_c#) – pre_c# is prerequisite course

GRADES (s#, c#, grade, year)

STUDENT(s#, sname) – sname is student name

Give queries expressed in relational algebra and tuple calculus for the following queries:

a) List all students taking courses with Smith or Jones.

b) List all students taking at least one course that their advisor teaches.

c) List those professors who teach more than one section of the same course.

d) List the courses that student 'John' can enroll, i.e. has passed the necessary pre_requisite courses but not the course itself.

Q2.(a) Explain the normal forms due to functional dependencies. (4)

(b) Draw an ER diagram for a garment manufacturing company. The entity includes warehouses, production units, marking wing, vendor and product types. Define the relationship between each of these entities and take the attributes so that they can define a particular entity property. (6)

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Q3. a) List the ACID properties. (2)

b) Explain generalization and serialization with suitable example. (3)

c) Compare Natural join with Outer join with suitable example. (5)

Q4. a) Explain the use of Checkpoints in recovery scheme. (2)

b) Differentiate between a serial schedule and serializable schedule. (3)

c) What is time stamp? Discuss the working of wait -die and wound-wait transaction. (5)

Q5. Explain the following terms: (4x2.5=10)

a) Fourth Normal form
b) Derived attributes
c) Triggers
d) Indexing

END