GIET MAIN CAMPUS AUTONOMOUS GUNUPUR – 765022

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Registration No: | | | | | | | | | | |

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4th Semester Regular Examination-April-May 2019

BCSPC4030-DATABASE MANAGEMENT SYSTEMS

(Regulations 2017) CSE

Time : 3 Hours Maximum : 100 Marks

Answer ALL Questions

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions) 10 x 2=20 Mark

Q.1. Answer *All* Questions.

a The basic data type char(n) is a _____ length character string and varchar(n) is _____ length character. CO1PO1

a) Fixed, equal b) Equal, variable c) Fixed, variable d) Variable, equal

b Updates that violate _____ are disallowed. CO1PO1

a) Integrity constraints b) Transaction control c) Authorization d) DDL constraints

c In _____ of Oracle, the database administrator creates a user account in the database for each user who needs access. CO2 PO1

a) Database Authentication b) Operating System Authentication c) Internal Authentication d) External Authentication

d The situation where the lock waits only for a specified amount of time for another lock to be released is CO2PO1

a) Lock timeout b) Wait-wound c) Timeout d) Wait

e Data integrity constraints are used to: CO2PO1

a) Control who is allowed access to the data b) Ensure that duplicate records are not entered into the table c) Improve the quality of data entered for a specific property (i.e., table column) d) Prevent users from changing the values stored in the table

f To include integrity constraint in an existing relation use : CO2 PO1

a) Create table b) Modify table c) Alter table d) Drop table

g Which-one ofthe following statements about normal forms is FALSE? CO2PO1

a) BCNF is stricter than 3 NF

b) Lossless, dependency -preserving decomposition into 3 NF is always possible

c) Loss less, dependency – preserving decomposition into BCNF is always possible

d) Any relation with two attributes is BCNF

h A table on the many side of a one to many or many to many relationship must: CO2PO2

a) Be in Second Normal Form (2NF) b) Be in Third Normal Form (3NF)

c) Have a single attribute key d) Have a composite key

i You have a column that will only contain values from 0 to 256. What is the most economical data type to use for the column? CO4 PO1

a) TINYINT b) SMALLINT c) INT d) DECIMAL(1)

j Which utilities can we use to export data from sql server to a text file? CO4PO1

a) DTS export wizard

b) BCP

c) ISQL

d) DTS export wizard and BCP

PART – B: (Short Answer Questions) 10 x 2 =20 Marks

Q.2. Answer *ALL* questions

a	How is a single user DBMS different from multi-user DBMS?	CO1PO1
b	Explain the various methods of converting ER-diagram containing specialization to tables.	CO2PO2
c	What is the need of weak entity set in a database system?	CO2PO1
d	Discuss the candidate key, primary key, super key, composite key and alternate key.	CO4PO1
e	What is a view? What are its advantages? Explain the syntax for creating views in SQL.	CO3PO1
f	Describe the goals of relational-database design.	CO3PO2
g	Explain the distinction between the terms serial schedule and serializable schedule.	CO3PO2
h	When a transaction is rolled back under timestamp ordering, it is assigned a new timestamp. Why can it not simply keep its old timestamp?	CO3PO1
i	Explain the concept of recovery in databases.	CO4PO1
j	Describe the differences in meaning between the terms relation and relation schema.	CO4 PO2

PART – C: (Long Answer Questions) 4 x 15=60 Marks

Answer *ALL* questions

Q.3			
a	In what sense does relational calculus differ from relational algebra, and in what sense they are similar?	(7)	CO1 PO1
b	How does tuple relational calculus differ from domain relational calculus?	(8)	CO1 PO2
	OR		
c	Construct an E-R diagram for University Examination office. The office maintains data about each class, including the instructor, the enrollment and the time and place of the class meetings. For each student class pair, a grade is recorded. Determine the entities and relationships that exist between the entities. Also construct the tabular representation of the entities and relationships.	(10)	CO1 PO2
d	What is an entity type? What is an entity set? Explain the difference between the entity, entity type and entity set? Describe various normalizations those are used in a business database.	(5)	CO1 PO2
Q.4			
a	Explain the two-phase locking protocol for concurrency control.	(7)	CO2 PO2
b	What are the three phases in the ARIES recovery algorithm? Explain them in detail.	(8)	CO2 PO2
	OR		
c	Construct an E-R diagram for University Registrar's Office. The office maintains data about each class, including the instructor, the enrollment and the time and place of the class meetings. For each student class pair, a grade is recorded. Determine the entities and relationships that exist between the entities. Also construct the tabular representation of the entities and relationships.	(10)	CO2 PO2
d	What is an entity type? What is an entity set? Explain the difference between the entity, entity type and entity set?	(5)	CO2 PO1
Q.5			
a	What is meant by the concurrent execution of database transactions in a multi-user system?	(7)	CO3 PO2
b	Discuss why concurrency control is needed. Give informal example.	(8)	CO3 PO2
	OR		
c	Explain in detail about external hashing techniques.	(8)	CO3 PO3
d	By considering an example, show how to reduce access time with primary index.	(7)	CO3 PO3
Q.6			
a	What is meant by the closure of functional dependencies? Illustrate with an example.	(7)	CO4 PO2
b	State 1NF, 2NF & 3NF and explain with examples.	(8)	CO4 PO3
	OR		
c	Why the concurrency control is needed? Explain it.	(7)	CO4 PO3
d	Write and explain optimistic concurrency control algorithm.	(8)	CO4 PO2

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