Dr. Babasaheb Ambedkar Open University

Term End Examination July-2016

Course : **PGDCA**
Subject Code : **PGDCA –103** **Total Marks : 70**
Subject : **Relational Database Management** **Duration : 03 hours**
Date : **Time:**

Section A **(30)**

Attempt any Three of the following:

1. Explain three-tier architecture of DBMS with figure.
2. List and explain various types of attributes which exists in ER model.
3. Normalize the following relation up to 3NF. Write all the FDs at each normal form.

PROJECT NUMBER	PROJECT NAME	EMPLOYEE NUMBER	EMPLOYEE NAME	DESIGNATION	CHARGE/ DAY (Rs.)	TOTAL DAYS	TOTAL CHARGES (Rs.)
15	Mobile Stock	103	Patel Bhavik	Elec. Engineer	800	24	19200
		101	Joshi Chintan	Database Designer	1000	20	20000
		105	Shah Rishi	Database Designer	1000	26	26000
		106	Pandya Jagdish	Programmer	500	23	11500
		102	Panchal Paresh	System Analyst	900	24	21600
18	Shop Point	114	Raval Vijay	Applications Designer	650	26	16900
		118	Darji Dhaval	General Support	400	45	18000
		104	Modi Darshan	System Analyst	900	33	29700
		112	Mewada Amit	DSS Analyst	700	45	31500
22	E-billing System	105	Shah Rishi	Database Designer	1000	66	66000
		104	Modi Darshan	System Analyst	900	49	44100
		113	Sanghvi Sandhya	Applications Designer	650	24	15600
		111	Patel Vyoma	Clerical Support	300	22	6600
		106	Pandya Jagdish	Programmer	500	13	6500
25	Real Estate Management	107	Pandya Krupa	Programmer	500	26	13000
		115	Shah Dharini	System Analyst	900	46	41400
		101	Pulyani Divya	Database Designer	1000	57	57000
		114	Raval Vijay	Applications Designer	650	33	21450

		108	Dave Kanika	System Analyst	900	24	21600
		118	Darji Dhaval	General Support	400	31	12400
		112	Mewada Amit	DSS Analyst	700	41	28700

4. Write only name of all the DML statement. Explain any three with their general syntax and example.
5. Explain centralized database system.

Section B **(20)**

Attempt the following (any four)

1. Explain various types of cardinalities with appropriate figure and example.
2. Explain entity integrity with appropriate example.

3. You have given relation schema R (A,B,C,D,E) and set F of functional dependencies
   $A \rightarrow BC$, $CD \rightarrow E$, $B \rightarrow D$, $E \rightarrow A$
   i. List the candidate key(s) for R. (3 marks)
   ii. IF R is decomposed into (A,B,C) and (A,D,E) then the decomposition is lossless? Justify your answer with reason. Answer without reason is not worth any mark. (2 marks)

4. You have given the following table with records. There is not any constraint defined.

   Cricket (playerId, PlayerName, ODI, runs)
   Perform the following for above table in SQL
   I. Make player ID primary key
   II. Add the columns wickets
   III. Display all the PlayerName
   IV. Delete the player whose playerID is 5
   V. Rename the table Cricket to BCCI.

5. Explain the following SQL operators with example.
   I. AND II. OR III. NOT
6. Write any five applications of DBMS.

Section C

(A) Multiple Choice Questions. (Give Four options for each MCQ) **(10)**

1 Database Management System is

A. Software Program B. Collection of Fields

C. Collection of Record D. None of these

2. Database is composed of

A. Tables B. Fields C. Records D. All of these

3. Which symbol is used to represent relationship set in E-R model?

A. Diamond B. Dotted Rectangle C. Rectangle D. None of these

4. Null values are

A. Not primary key fields B. Same as secondary key fields

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C. Same as primary key fields D. All of these

5. Normalization is used to

A. Expand the table size B. Reduce the data redundancy

C. Create class diagram D. None of these

6. If A->B , B->C then A->C is known as

A. Augmentation dependency B. Reflexivity dependency

C. Transitivity dependency D. All of these

7. Which normal form is considered adequate for normal relation database design B-2, P-37

A. 1NF B. 2NF C. 3 NF D. BCNF

8. Row is also known as

A. Attribute B. Field C. Tuple D. None of these

9. The common column is eliminated in

A. Theta join B. Natural Join C. Left outer join D. Right outer join

10. _____ is the maximum value which is stored by Tinyint datatype.

A. 2147483647 B. 127 C. 65535 D. 255

(B) Do as directed. (10)

1. Write only name of any two information provided by metadata.
2. State : True or False

   Truncate statement is a DML statement
3. State: True or False

   Revoke statement is a DML statement
4. State: True or False :

   Primary key is always including not null constraint.
5. If X -> Y then X is called _____.
6. State: True or False

   Any BCNF relation is always also in 3NF
7. Which symbol is used to represent projection operation in relational algebra?
8. Which function is used to remove blank spaces from left and right side of the string?
9. Which wild card character is used to compare more than one character using SQL?
10. State : True or False

    A relation is a two dimensional table in a relational model.

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