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Unit 2 - Week 1

Register for Certification exam

Course outline

How to access the portal

Week 1

- Lecture 1 : Course Overview
- Lecture 2 : Introduction to DBMS/1
- Lecture 3 : Introduction to DBMS/2
- Lecture 4 : Introduction to Relational Model/1
- Lecture 5 : Introduction to Relational Model/2
- Week 1 : Lecture Material
- Quiz : Week-1: Assignment-1
- Feedback for Week 1

Week 2

Week 3

Week 4

Assignment Solution

Download Videos

Week-1: Assignment-1

The due date for submitting this assignment has passed. **Due on 2018-08-22, 23:59 IST.**

Score: 5/20=25%

Submitted assignment (Submitted on 2018-08-07, 18:19)

1) **Question 1** *2 points*

Identify the correct statement. Marks: 2, MCQ

- a) Logical level Abstraction: hide details of data types.
- b) Logical level Abstraction: describes how schema is stored in a data base.
- c) Logical level Abstraction: describes how a record is stored.
- d) Logical level Abstraction: describes accessibility of the database by an individual user.

Yes, the answer is correct.
Score: 2

Accepted Answers:
b) Logical level Abstraction: describes how schema is stored in a data base.

2) *2 points*

Question 2

If R and S are two relation then $R \cap S$ can be represented as. *Marks: 2* MCQ

- a) $S - (R - S)$
- b) $R - (S - R)$
- c) $(R \cup S) - [(R - S) \cup (S - R)]$
- d) $(R \cup S) \cap [(R - S) \cup (S - R)]$

No, the answer is incorrect.
Score: 0

Accepted Answers:
c) $(R \cup S) - [(R - S) \cup (S - R)]$

3) *2 points*

Question 3

Consider the following relations *Marks: 2* MCQ

```
student(id, name, address, gpa, sizeHS)
campus(location, enrollment, rank)
apply(id, location, date, major, decision)
```

Identify the correct query to find name and address of all students with GPA $>$ 3.7 and sizeHS $<$ 1000.

a) $\Pi_{name,\ address}(\sigma_{GPA>3.7 \wedge sizeHS<1000}(\texttt{student}))$

b) $\sigma_{name,\ address}(\Pi_{GPA>3.7 \wedge sizeHS<1000}(\texttt{student}))$

c) $\Pi_{name,\ address}(\sigma_{GPA>3.7 \vee sizeHS<1000}(\texttt{student}))$

d) $\sigma_{name,\ address}(\Pi_{GPA>3.7 \vee sizeHS<1000}(\texttt{student}))$

No, the answer is incorrect.
Score: 0

Accepted Answers:
a) $\Pi_{name,\ address}(\sigma_{GPA>3.7 \wedge sizeHS<1000}(\texttt{student}))$

4) ***2 points***

Question 4

r_1

P	Q	R
p	q	r
k	i	j
m	q	r
d	e	f

r_2

Q	R	S
q	r	n
l	c	o
q	r	a
q	r	b
e	f	g

Identify the number of tuples in the relation $R_1 \bowtie R_2$. *Marks: 2* **MCQ**

a) 5
b) 6
c) 7
d) 20

No, the answer is incorrect.
Score: 0

Accepted Answers:
c) 7

5) **Question 5** ***2 points***

In SQL, which of the following is/are not a DML Commands ? Marks: 2 MSQ

a) DELETE
b) TRUNCATE
c) SELECT
d) CREATE

Yes, the answer is correct.
Score: 2

Accepted Answers:
b) TRUNCATE
d) CREATE

6) ***2 points***

Question 6

Identify the correct statement about Foreign Key. *Marks: 2* MCQ

a) A data element/attribute within a data field of a data record that is not unique, and can be used to distinguish one data record in a database from another data record within database table.

b) A data element/attribute within a data field of a data record within a database table that is a secondary key in another database table.

c) A data element/attribute within a data field of a data record within a database table that is a primary key in another database table.

d) A data element/attribute within a data field of a data record that enables a database to uniquely distinguish one data record in a database from another data record within database table.

No, the answer is incorrect.
Score: 0

Accepted Answers:
c) A data element/attribute within a data field of a data record within a database table that is a primary key in another database table.

7) ***2 points***

Question 7

Information about a collection of students is given by the relation

studinfo(<u>studId</u>, name, sex)

The relation

enroll(<u>studId, courseId</u>)

gives which student has enrolled for (or taken) what course(s). Assume that every course is taken by atleast one male and at least one female student. What does the following relational algebra expression represent?

Marks: 2 MCQ

$$\Pi_{courseId}((\Pi_{studId}(\sigma_{sex="female"}(\texttt{studInfo})) \times \Pi_{\texttt{courseId}}(\texttt{enroll})) - \texttt{enroll})$$

a) courses in which all the female students are enrolled
b) courses in which a proper subset of female students are enrolled
c) courses in which only male students are enrolled
d) None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
b) courses in which a proper subset of female students are enrolled

8) ***2 points***

Question 8

Consider the following two relations below. The primary keys are underlined.

Identify the possible combinations of foreign key. *Marks: 2* MCQ

- employee (employee_id, department_id, employee_name, salary)
- department (department_id, manager_id)

a) employee_id
b) department_id
c) department_id, manager_id
d) department_id, manager_id, employee_name

No, the answer is incorrect.
Score: 0

Accepted Answers:
b) department_id

9) ***2 points***

Question 9

Identify the correct order of query processing *Marks: 2* MCQ

1. Evaluation
2. Translation
3. Optimization
4. Parsing

a) 2,4,3,1
b) 4,2,1,3
c) 4,2,3,1
d) 2,4,1,3

No, the answer is incorrect.
Score: 0

Accepted Answers:
c) 4,2,3,1

10) **Question 10** ***2 points***

Identify the correct statement(s). Marks: 2 MSQ

Responsibilities of Transaction-management component :

a) Ensures that the database remains in a consistent state despite Power failures
b) Ensures that the database remains in a consistent state despite Operating system crashes
c) Ensure the consistency of the database during interaction among the concurrent transactions
d) Ensure consistency of database by orchestrating all access requests issued by the transactions

Partially Correct.
Score: 1

Accepted Answers:
a) Ensures that the database remains in a consistent state despite Power failures
b) Ensures that the database remains in a consistent state despite Operating system crashes

Previous Page End