Code No: RR220502 **RR** **Set No. 2**

II B.Tech II Semester Examinations,December 2010
DATABASE MANAGEMENT SYSTEMS
Common to Information Technology, Computer Science And Engineering, Computer Science And Systems Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Write short notes on:
   (a) Key constraints
   (b) General constraints
   (c) Relational calculus. [6+5+5]

2. Discuss about the following:
   (a) What is the goal of query optimization? Why is it important?
   (b) Describe the advantages of pipelining.
   (c) Describe how to evaluate a grouping query with aggregation operator MAX using sorting based approach. [6+4+6]

3. (a) If a system fails repeatedly during recovery, what is the maximum number of log records that can be written (as a function of number of update and other log records written before crash) before restart completes successfully.
   (b) What is the oldest log record that we need to retain?
   (c) If a bounded amount of stable storage is needed for the log, how can we ensure that there is always enough stable storage to hold all log records written during restart? [5+5+6]

4. (a) Consider two transactions as follows:
   Transaction 1: Fac_salary:=Fac_salary+1025.00
   Transaction 2: Fac_salary:= Fac_salary *1.1
   What precaution, if any, would you suggest if these were to run concurrently? Write a pseudo code program for these transactions using an appropriate scheme to avoid undesirable results.
   (b) Explain Wait-die and Wound-wait in Deadlock prevention? [8+8]

5. (a) Consider the following schema:
   Sailors (Sid: integer, sname: string, rating: integer, age: real)
   Boats (bid: integer, bname: string, color: string)
   Reserves (Sid: integer, bid: integer, day: date)

   Write the following queries in Nested queries in SQL.
   i. Find the names of sailors who have reserved boat 103.

ii. Find the names of sailors who have reserved a red boat.
iii. Find the names of sailors who have not reserved a red boat.
iv. Find the sailors with the highest rating.
v. Find the names of sailors who have reserved both a red and a green boat. [2+2+2+2+3]

(b) Discuss about string operations with examples in SQL. [5]

6. (a) What is indexing ? Explain with an example.
(b) Explain about query processing. [8+8]

7. (a) Explain the functional dependencies and multi valued dependencies with examples.
(b) What is normalization? Discuss the 1NF,2NF, and 3NF Normal forms with examples. [8+8]

8. How does multilevel indexing improve the efficiency of searching an index file.[16]

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Code No: RR220502 **RR** **Set No. 4**

II B.Tech II Semester Examinations,December 2010
DATABASE MANAGEMENT SYSTEMS
Common to Information Technology, Computer Science And Engineering, Computer Science And Systems Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. How does multilevel indexing improve the efficiency of searching an index file. [16]

2. (a) Consider two transactions as follows:
Transaction 1: Fac_salary:=Fac_salary+1025.00
Transaction 2: Fac_salary:= Fac_salary *1.1
What precaution, if any, would you suggest if these were to run concurrently? Write a pseudo code program for these transactions using an appropriate scheme to avoid undesirable results.
(b) Explain Wait-die and Wound-wait in Deadlock prevention? [8+8]

3. Write short notes on:
(a) Key constraints
(b) General constraints
(c) Relational calculus. [6+5+5]

4. Discuss about the following:
(a) What is the goal of query optimization? Why is it important?
(b) Describe the advantages of pipelining.
(c) Describe how to evaluate a grouping query with aggregation operator MAX using sorting based approach. [6+4+6]

5. (a) If a system fails repeatedly during recovery, what is the maximum number of log records that can be written (as a function of number of update and other log records written before crash) before restart completes successfully.
(b) What is the oldest log record that we need to retain?
(c) If a bounded amount of stable storage is needed for the log, how can we ensure that there is always enough stable storage to hold all log records written during restart? [5+5+6]

6. (a) What is indexing ? Explain with an example.
(b) Explain about query processing. [8+8]

7. (a) Consider the following schema:
Sailors (Sid: integer, sname: string, rating: integer, age: real)

Boats (bid: integer, bname: string, color: string)
Reserves (Sid: integer, bid: integer, day: date)

Write the following queries in Nested queries in SQL.

i. Find the names of sailors who have reserved boat 103.
ii. Find the names of sailors who have reserved a red boat.
iii. Find the names of sailors who have not reserved a red boat.
iv. Find the sailors with the highest rating.
v. Find the names of sailors who have reserved both a red and a green boat.

[2+2+2+2+3]

(b) Discuss about string operations with examples in SQL. [5]

8. (a) Explain the functional dependencies and multi valued dependencies with examples.

(b) What is normalization? Discuss the 1NF,2NF, and 3NF Normal forms with examples. [8+8]

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Code No: RR220502 **RR** **Set No. 1**

II B.Tech II Semester Examinations,December 2010
DATABASE MANAGEMENT SYSTEMS
Common to Information Technology, Computer Science And Engineering, Computer Science And Systems Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Consider two transactions as follows:
Transaction 1: Fac_salary:=Fac_salary+1025.00
Transaction 2: Fac_salary:= Fac_salary *1.1
What precaution, if any, would you suggest if these were to run concurrently? Write a pseudo code program for these transactions using an appropriate scheme to avoid undesirable results.
(b) Explain Wait-die and Wound-wait in Deadlock prevention? [8+8]

2. (a) Explain the functional dependencies and multi valued dependencies with examples.
(b) What is normalization? Discuss the 1NF,2NF, and 3NF Normal forms with examples. [8+8]

3. How does multilevel indexing improve the efficiency of searching an index file. [16]

4. (a) What is indexing ? Explain with an example.
(b) Explain about query processing. [8+8]

5. (a) Consider the following schema:
Sailors (Sid: integer, sname: string, rating: integer, age: real)
Boats (bid: integer, bname: string, color: string)
Reserves (Sid: integer, bid: integer, day: date)

Write the following queries in Nested queries in SQL.
   i. Find the names of sailors who have reserved boat 103.
   ii. Find the names of sailors who have reserved a red boat.
   iii. Find the names of sailors who have not reserved a red boat.
   iv. Find the sailors with the highest rating.
   v. Find the names of sailors who have reserved both a red and a green boat. [2+2+2+2+3]

(b) Discuss about string operations with examples in SQL. [5]

6. Discuss about the following:
(a) What is the goal of query optimization? Why is it important?
(b) Describe the advantages of pipelining.

(c) Describe how to evaluate a grouping query with aggregation operator MAX using sorting based approach. [6+4+6]

7. Write short notes on:

   (a) Key constraints

   (b) General constraints

   (c) Relational calculus. [6+5+5]

8. (a) If a system fails repeatedly during recovery, what is the maximum number of log records that can be written (as a function of number of update and other log records written before crash) before restart completes successfully.

   (b) What is the oldest log record that we need to retain?

   (c) If a bounded amount of stable storage is needed for the log, how can we ensure that there is always enough stable storage to hold all log records written during restart? [5+5+6]

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Code No: RR220502 **RR** **Set No. 3**

II B.Tech II Semester Examinations,December 2010
DATABASE MANAGEMENT SYSTEMS
Common to Information Technology, Computer Science And Engineering, Computer Science And Systems Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) If a system fails repeatedly during recovery, what is the maximum number of log records that can be written (as a function of number of update and other log records written before crash) before restart completes successfully.
   (b) What is the oldest log record that we need to retain?
   (c) If a bounded amount of stable storage is needed for the log, how can we ensure that there is always enough stable storage to hold all log records written during restart? [5+5+6]

2. Discuss about the following:
   (a) What is the goal of query optimization? Why is it important?
   (b) Describe the advantages of pipelining.
   (c) Describe how to evaluate a grouping query with aggregation operator MAX using sorting based approach. [6+4+6]

3. (a) What is indexing ? Explain with an example.
   (b) Explain about query processing. [8+8]

4. (a) Explain the functional dependencies and multi valued dependencies with examples.
   (b) What is normalization? Discuss the 1NF,2NF, and 3NF Normal forms with examples. [8+8]

5. (a) Consider the following schema:
   Sailors (Sid: integer, sname: string, rating: integer, age: real)
   Boats (bid: integer, bname: string, color: string)
   Reserves (Sid: integer, bid: integer, day: date)

   Write the following queries in Nested queries in SQL.
   i. Find the names of sailors who have reserved boat 103.
   ii. Find the names of sailors who have reserved a red boat.
   iii. Find the names of sailors who have not reserved a red boat.
   iv. Find the sailors with the highest rating.
   v. Find the names of sailors who have reserved both a red and a green boat. [2+2+2+2+3]

(b) Discuss about string operations with examples in SQL. [5]

6. (a) Consider two transactions as follows:
Transaction 1: Fac_salary:=Fac_salary+1025.00
Transaction 2: Fac_salary:= Fac_salary *1.1
What precaution, if any, would you suggest if these were to run concurrently? Write a pseudo code program for these transactions using an appropriate scheme to avoid undesirable results.

(b) Explain Wait-die and Wound-wait in Deadlock prevention? [8+8]

7. Write short notes on:

(a) Key constraints

(b) General constraints

(c) Relational calculus. [6+5+5]

8. How does multilevel indexing improve the efficiency of searching an index file.[16]

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