

Government College of Engineering, Aurangabad

(An Autonomous Institute of Government of Maharashtra)

M.E. (Computer Science and Engineering) Examination

End Semester Examination Dec 2016

CS 543: Advanced Database Management System

Time: Three Hours

Date: 5 DEC 2016

Max Marks : 60

"Verify the course code and check whether you have got the correct question paper"

N.B.

1. All the questions are compulsory
2. Figure to the right indicate full marks
3. Assume suitable data if necessary and state it clearly

Q.1. Attempt any two (Each carry 6 marks)

- A) Describe the concept of dynamic restructuring.
- B) Differentiate between conflict serializability and view serializability.
- C) Describe the workflow model for electronic mail with diagram.

Q.2. Attempt any two (Each carry 6 marks)

- A) Compare between object oriented and object relational database.
- B) Describe the collection types and nested tables with example.
- C) Describe the concept of persistent programming language and persistent object.

Q.3. Attempt any three (Each carry 4 marks)

Write a short note on

- a. Partitioning techniques
- b. Inter query Parallelism
- c. Intra query parallelism
- d. Handling Skews

Q.4. Attempt any three (Each carry 6 marks)

- A) Describe Horizontal and Vertical fragmentation with suitable example.
- B) Describe the concept of Concurrency Control in distributed database.
- C) Describe Deadlock Detection and Prevention in distributed database.

Q.5 Attempt any three (Each carry 6 marks)

- A) Explain how query reduction is achieved using fragmentation.
- B) How can we check the feasibility of using semi-join over natural Join? Explain.
- C) Consider the relation $r_1(A,B,C)$, $r_2(C,D,E)$ and $r_3(E,F)$ with primary keys A,C, and E respectively. Assume that r_1 has 1000 tuples, r_2 has 1500 tuples, and r_3 has 750 tuples. Estimate the size of $r_1 \times r_2 \times r_3$ and give an efficient strategy for computing the join.

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