

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2024
(Fourth Semester)

Branch -- COMPUTER SCIENCE WITH DATA ANALYTICS

MODERN DATABASE SYSTEMS

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

1 _____ is storing copy of the database at multiple location.

- (i) Data Replication (ii) Horizontal Partitioning
(iii) Vertical Partitioning (iv) Horizontal and Vertical Partitioning

2 _____ helps in implementing inter-operation parallelism.

- (i) Interdependent parallelism (ii) Intra-query parallelism
(iii) Inter-query parallelism (iv) Pipelined parallelism

3 _____ has the world's largest Hadoop cluster.

- (i) Apple (ii) Datamatic
(iii) Facebook (iv) Google

4 _____ can best be described as a programming model used to develop Hadoop-based applications that can process massive amounts of data.

- (i) MapReduce (ii) Mahout
(iii) Oozie (iv) Hive

5 MongoDB stores documents in ____.

- (i) Document (ii) Collections.
(iii) Application (iv) Table

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

6 a Explain the need for Distributed database System.

OR

b Explain the concept of Fragmentation.

7 a Explain query processing with example.

OR

b Elucidate the need for Load Balancing.

8 a Explain Aggregate data Models.

OR

b Explain Graph Database.

Cont...

- 9 a Enumerate Google database.
OR
b Elucidate steps in Database Revolution.
- 10 a Explain the features of MongoDB.
OR
b Outline the concept of In-memory database.

SECTION -C (30 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks

(5 x 6 = 30)

- 11 a Explain Architecture of Distributed Database with neat diagram. .
OR
b Elucidate design issues in Distributed database systems.
- 12 a Explain Database Clusters.
OR
b Elucidate the architecture of Parallel database System.
- 13 a Explain the Emergence of NoSQL.
OR
b Explain the concept of MapReduce.
- 14 a Explain the advantages of Hadoop.
OR
b Narrate the significance of Big Data.
- 15 a Elucidate Cassandra database.
OR
b Distinguish between HBase and Hadoop.

Z-Z-Z

END