Reg. No. :

Question Paper Code : 70062

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2023.

Seventh Semester

Artificial Intelligence and Data Science

AD 8704 — BIG DATA MANAGEMENT

(Regulations 2017)

Time : Three hours　　　　　　　　　　　　　　　　Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Differentiate structured data and unstructured data.

2. Why is Cloud important in big data analytics?

3. List down the categories of NoSQL database.

4. What is sharding in NoSQL?

5. List down the advantages of Hadoop streaming.

6. Differentiate Namenode and Datanode.

7. List down the failures of classic MapReduce.

8. What is the input format for MapReduce?

9. State the purpose of Pig Grunt.

10. List down the advantages of HIVE.

PART B — (5 × 13 = 65 marks)

11. (a) Explain the main characteristics of Big Data with examples where ever necessary. (13)

Or

(b) Explain how Big data helps in

(i) Credit risk management (6)

(ii) Healthcare management. (7)

12. (a) Why is NoSQL grouped under aggregate data model? Explain with an example. (13)

Or

(b) With examples of your own, explain the various models for data distribution of NoSQL. (13)

13. (a) With a neat block diagram explain the working of Hadoop Distributed File System. (13)

Or

(b) Explain in detail about Hadoop I/O and how data integrity in maintained in Hadoop. (13)

14. (a) Explain the phases of Map-Reduce programming workflows with a neat diagram. (13)

Or

(b) Explain the application workflow in Hadoop YARN with a neat sequence diagram. (13)

15. (a) Explain the following

(i) Hbase data model (6)

(ii) Cassandra data model. (7)

Or

(b) Explain the following

(i) Pig data model (6)

(ii) Hive data types and file formats. (7)

PART C — (1 × 15 = 15 marks)

16. (a) Write a MapReduce program to calculate total salary of employee in each department in the university.

The input is in the following format

<emp_id, department, salary>

Or

(b) (i) Create a MongoDB collection to represent a student of a class, insert three documents into it. (7)

(ii) Retrieve the documents whose age is above 18 and studies in 'cse' department. (4)

(iii) Delete the records of the students who belong to 'ece' department. (4)

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