

Code No.: DS623PE

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**CMR ENGINEERING COLLEGE: : HYDERABAD**  
**UGC AUTONOMOUS**  
**III-B.TECH-II-Semester End Examinations (Supply) - January- 2024**  
**DATA ENGINEERING**  
**(CSD)**

[Time: 3 Hours]

[Max. Marks: 70]

**Note:** This question paper contains two parts A and B.  
Part A is compulsory which carries 20 marks. Answer all questions in Part A.  
Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

**PART-A**

**(20 Marks)**

1. a) List the types of databases. [2M]
- b) Differentiate data engineer and data scientist. [2M]
- c) What is database normalization? [2M]
- d) Why Big Data is important? [2M]
- e) What are APIs? [2M]
- f) Write about the importance of kubernetes. [2M]
- g) Compare and contrast MongoDB with SQL. [2M]
- h) What is timeseries database and give an example? [2M]
- i) Name 5 key capabilities of Qlik sense. [2M]
- j) What are the 4 types of digital twins? [2M]

**PART-B**

**(50 Marks)**

- 2.a) Differentiate OLAP and OLTP databases. [6M]
  - b) What are the basic data engineering skills? [4M]
- OR**
- 3.a) Explain the differences between NoSQL and RDBMS with suitable examples. [6M]
  - b) How to create NoSQL database in Apache Cassandra? [4M]
4. Explain the process of creating AWS account and its services. [10M]
- OR**
5. What are the problems with ETL Scaling up, Scaling out? [10M]
- 6.a) What are the features of Hadoop that makes it popular? [6M]
  - b) Describe the Docker microservices. [4M]
- OR**
- 7.a) Explain the Container Orchestration. [5M]
  - b) What are the 4 components of REST APIs? [5M]
- 8.a) Demonstrate ODBC/JDBC server connections. [5M]
  - b) What are the 4 types of NoSQL Stores? [5M]
- OR**
- 9.a) Write the differences between Apache Kudu and Impala. [6M]
  - b) What are the advantages of map reduce? [4M]
10. Describe the Streaming data analytics architecture and its requirements. [10M]
- OR**
11. Compare and contrast Lambda architecture and Kappa architecture with kudu using neat examples. [10M]

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