PVP 23

Code: 23DS3401

II B.Tech - II Semester – Regular Examinations - MAY 2025

DATA ENGINEERING
(DATA SCIENCE)

Duration: 3 hours Max. Marks: 70

Note: 1. This question paper contains two Parts A and B.
2. Part-A contains 10 short answer questions. Each Question carries 2 Marks.
3. Part-B contains 5 essay questions with an internal choice from each unit. Each Question carries 10 marks.
4. All parts of Question paper must be answered in one place.

BL – Blooms Level CO – Course Outcome

PART – A

			BL	CO
1.	a)	Describe Data Maturity.	L2	CO1
	b)	Explain Evolution of Data Engineer.	L2	CO1
	c)	List the roles of a Data Engineer.	L2	CO1
	d)	Explain Operational analytics in DE.	L2	CO1
	e)	Define TOGAF's.	L2	CO1
	f)	Explain Distributed Systems.	L2	CO1
	g)	Differentiate Single Machine and Distributed Storage.	L2	CO1
	h)	Define OLTP and OLAP.	L2	CO1
	i)	Explain Data Ingestion.	L2	CO1
	j)	Differentiate ETL and ELT.	L2	CO1

PART – B

			BL	CO	Max. Marks
UNIT-I					
2	a)	Explain Data Maturity Model.	L2	CO1	5 M

	b)	Describe Data Engineering Versus Data Science.	L2	CO1	5 M
OR					
3	a)	Demonstrate Data Engineering Life Cycle.	L2	CO1	5 M
	b)	Describe Skills of Data Engineer.	L2	CO1	5 M
UNIT-II					
4	a)	Explain Evaluation of storage systems.	L2	CO1	5 M
	b)	Describe Data modeling and design.	L2	CO1	5 M
OR					
5	a)	Compare Data Life Cycle and Data Engineering Life Cycle.	L2	CO1	5 M
	b)	Discuss Key considerations for batch versus stream ingestion.	L2	CO1	5 M
UNIT-III					
6	a)	Explain Prioritize security.	L3	CO2	5 M
	b)	Describe Tight Versus Loose Coupling.	L3	CO2	5 M
OR					
7	a)	Explain Principles of Good Data Architecture.	L3	CO2	5 M
	b)	Describe Examples and Types of Data Architecture.	L2	CO2	5 M
UNIT-IV					
8	a)	Explain about Data Lake and Data Lakehouse.	L3	CO2	5 M
	b)	Explain CRUD Data Generation in Source Systems.	L3	CO2	5 M

OR					
9	a)	Describe Files and Unstructured Data in Data Generation.	L3	CO2	5 M
	b)	Explain Data Engineering Storage Abstractions.	L3	CO3	5 M
UNIT-V					
10	a)	Describe Ways to Ingest Data.	L4	CO4	5 M
	b)	Explain Serialization and deserialization in the Ingestion Phase.	L3	CO3	5 M
OR					
11	a)	Explain Data Migration.	L3	CO3	5 M
	b)	Explain Synchronous versus asynchronous in the Ingestion Phase.	L3	CO3	5 M