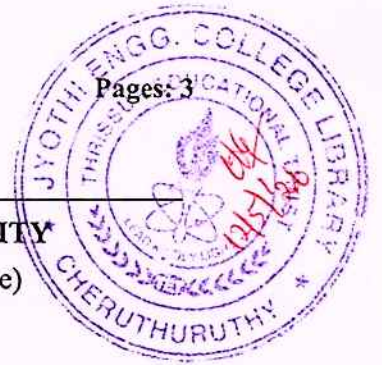


Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
B.Tech Degree S4 (R) Examinations April 2026 (2024 Scheme)



Course Code: PEADT412

Course Name: DATA SCIENCE PRIVACY & ETHICS

Max. Marks: 60

Duration: 2 hours 30 minutes

PART A

(Answer all questions. Each question carries 3 marks)

		CO	Marks
1	Define risk, harm, and benefit assessment.	CO1	(3)
2	Explain data collection with examples.	CO1	(3)
3	Explain the degrees of privacy.	CO2	(3)
4	Explain errors in data processing.	CO2	(3)
5	What is SQL injection, and how does it pose a threat to data security?	CO3	(3)
6	Differentiate between authentication and authorisation.	CO3	(3)
7	Describe how security standards help organisations ensure data confidentiality, integrity, and availability.	CO4	(3)
8	Describe the steps involved in a data audit process.	CO4	(3)

PART B

(Answer any one full question from each module, each question carries 9 marks)

Module -1

- | | | | |
|---|--|-----|-----|
| 9 | a) A social media company collects user data for advertisements. Define ethical issues related to data collection and privacy. List measures to ensure ethical data usage. | CO1 | (5) |
| | b) Explain data quality and its importance in data handling. | CO1 | (4) |

- 10 a) Analyse risk, harm, and benefit in a real-world data system and suggest mitigation strategies. CO1 (3)
- b) Describe the six key principles of data ethics and their significance in protecting human rights. CO1 (6)

Module -2

- 11 a) Explain the importance of data validity in a system that collects student performance data. Explain how the choice of attributes affects accuracy. CO2 (5)
- b) Explain modern privacy risks with examples. CO2 (4)
- 12 a) Explain the concept of data ownership in a social media platform and explain why ownership is important for users. CO2 (5)
- b) Explain open data usage and its characteristics. CO2 (4)

Module -3

- 13 a) An organisation frequently faces data access issues. Examine how metadata management can improve data accessibility and system performance. CO3 (4)
- b) An e-commerce platform experiences unexpected downtime due to heavy traffic. Examine how DDoS attacks affect database systems and analyse their consequences. CO3 (5)
- 14 a) A banking system is vulnerable to security threats. Analyse common security challenges such as SQL injection and malware attacks and explain their impact on the database. CO3 (6)
- b) A company database was compromised due to weak user practices. Analyse how human error contributes to security breaches and suggest preventive strategies. CO3 (3)

Module -4

- 15 a) Your organisation is facing challenges in managing long-term data storage. Evaluate different data retention policies such as GDPR retention and 7-year retention policy, and recommend the most suitable approach. CO4 (5)
- b) A financial institution needs to secure sensitive customer information. Evaluate different security standards and design a framework to ensure data protection. CO4 (4)

- 16 a) A company failed a compliance audit due to poor data handling practices. CO4 (5)
Evaluate the role of compliance and audits in data protection and propose
corrective measures to prevent future failures.
- b) Discuss the importance of security standards and how they help organisations CO4 (4)
prevent data breaches.
