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Question Paper Code:UEG71

B.E./B.Tech. DEGREE EXAMINATION, APRIL / MAY 2025

Professional Elective

Artificial Intelligence & Data Science

21ADVG73- DATA ANALYTICS

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 20 = 100 Marks)

1. (a) Describe in detail about Big data Technology landscape CO1- U (20)
Or
(b) What are the primary challenges associated with analyzing unstructured data, and explain how can organizations overcome them? CO1- U (20)
2. (a) Explain the architecture of HDFS with a neat diagram. CO1- U (20)
Or
(b) Explain the different data serialization formats in Hadoop I/O. Compare Text, Sequence, and Avro file formats. CO1- U (20)
3. (a) Explain the data model of HBase with a detailed diagram. How does HBase store and retrieve data? CO1- U (20)
Or
(b) Describe the different ways to interact with Cassandra, including CQL (Cassandra Query Language), Python drivers, and Java clients. CO1- U (20)
4. (a) Analyze how Big Data is transforming industries like healthcare, finance, and retail. What are the major benefits? CO3-Ana (20)
Or
(b) Compare Analytics 1.0, Analytics 2.0, and Analytics 3.0. How has the evolution of analytics influenced business intelligence? CO3-Ana (20)

5. (a) Given a Hadoop cluster with multiple applications running, how would you configure YARN to optimize resource allocation and prevent resource contention? CO2- App (20)

Or

- (b) Apply the use of the Grunt Shell in Apache Pig by executing Pig scripts in different modes. Provide examples to illustrate each execution method. CO2- App (20)