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Question Paper Code	12401
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B.E. / B.Tech - DEGREE EXAMINATIONS, NOV / DEC 2023

Fifth Semester

Information Technology

20ITPC502 - BIG DATA ESSENTIALS

(Regulations 2020)

Duration: 3 Hours

Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

- | | <i>Marks,
K-Level, CO</i> |
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| 1. Identify the sources of structured data in big data and list some examples. | <i>2,K1,CO1</i> |
| 2. Write down the characteristics of Big Data Applications. | <i>2,K1,CO1</i> |
| 3. Why does HDFS exhibit fault tolerance? | <i>2,K2,CO2</i> |
| 4. State Some Key Points About Apache Avro. | <i>2,K2,CO2</i> |
| 5. What are the responsibilities of NODE manager in YARN? | <i>2,K1,CO3</i> |
| 6. Specify the Map Reduce job control options. | <i>2,K1,CO3</i> |
| 7. List out the different complex data types in Pig. | <i>2,K1,CO4</i> |
| 8. Which code is used to open the connection in Hbase? | <i>2,K2,CO4</i> |
| 9. Outline the key features of GPU computing. | <i>2,K2,CO5</i> |
| 10. Why is the CUDA memory function used? | <i>2,K2,CO5</i> |

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11. a) Discuss in detail about evolution of big data and its characteristics. *13,K2,CO1*
- OR**
- b) Summarize in detail about big data analytics and its types with relevant examples. *13,K2,CO1*
12. a) Elaborate the basic concepts of HDFS and explain the design of HDFS. *13,K3,CO2*
- OR**
- b) Identify how data is ingested and discuss in detail about Data Ingest with Flume and Scoop with relevant examples. *13,K3,CO2*

13. a) Describe in detail about the working principle of Map Reduce with neat diagram and elaborate the role of map reduces in apache hadoop. *13,K3,CO3*

OR

- b) Analyze the need of File formats in Map reduce and Explain in detail about different file format used in Mapreduce. *13,K3,CO3*

14. a) In PIG Is there an easy way to figure out how many rows exist in a dataset from its alias? Describe in detail about different PIG relational operators. *13,K4,CO4*

OR

- b) Explain in detail about Hbase with Hbase architecture. *13,K4,CO4*

15. a) Analyze in detail about CUDA memory model with relevant examples. *13,K4,CO5*

OR

- b) Explain how to do data analysis in an Interactive environment with Apache Spark? *13,K4,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Write a CUDA program to perform matrix multiplication. *15,K3,CO6*

OR

- b) Describe in detail how GPU is better than CPU with comparative study. *15,K3,CO6*