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**INSTITUTE OF AERONAUTICAL ENGINEERING**

(Autonomous)

Dundigal-500043, Hyderabad

B.Tech VII SEMESTER END EXAMINATIONS (REGULAR/SUPPLEMENTARY) - DECEMBER 2022

Regulation: R18

BIG DATA AND BUSINESS ANALYTICS**Time: 3 Hours****(COMPUTER SCIENCE AND ENGINEERING)****Max Marks: 70****Answer FIVE Questions choosing ONE question from each module****All Questions Carry Equal Marks****All parts of the question must be answered in one place only****MODULE – I**

1. (a) What is big data? List the characteristics of big data. Describe the terminologies used in big data. [BL: Understand| CO: 1|Marks: 7]
(b) List the various steps involved in big data analytics. Identify the difference between traditional data and big data. [BL: Understand| CO: 1|Marks: 7]
2. (a) Identify the different applications of big data. Explain how big data is useful in health care. [BL: Understand| CO: 1|Marks: 7]
(b) If an organization retains large data which is not evaluated or analyzed, it will not benefit the organization. Identify how big data analytics would benefit the organization in this scenario. [BL: Understand| CO: 1|Marks: 7]

MODULE – II

3. (a) Outline the different modes in which Hadoop can be installed and what is the use of each mode from application and developer point of view? [BL: Understand| CO: 2|Marks: 7]
(b) Discuss the architecture of Hadoop technology and justify how it satisfies the business insights now-a-days? [BL: Understand| CO: 2|Marks: 7]
4. (a) Explain the uses of name node, data node and secondary name node in Hadoop distributed file system. [BL: Understand| CO: 2|Marks: 7]
(b) Differentiate between RDBMS and Hadoop. Develop common Hadoop shell commands with an example. [BL: Understand| CO: 2|Marks: 7]

MODULE – III

5. (a) How can you configure Hadoop cluster in local mode? Illustrate Hadoop core components with a neat diagram. [BL: Understand| CO: 3|Marks: 7]
(b) Discuss administering Hadoop with its checking point process diagram. Distinguish between the old and new versions of Hadoop API for Map Reduce frame work. [BL: Understand| CO: 3|Marks: 7]
6. (a) Demonstrate command line interface using HDFS files and give a brief note on Hadoop-specific file system types and HDFS commands [BL: Understand| CO: 4|Marks: 7]

- (b) Enlist the different HDFS file operations. Describe in detail the anatomy of file read and write in HDFS. [BL: Understand| CO: 4|Marks: 7]

MODULE – IV

7. (a) Interpret the various methods in MapReduce job class. Discuss in brief the role of mapper and reducer in Hadoop Map reduce. [BL: Understand| CO: 5|Marks: 7]
(b) In Map-Reduce implementation of word count, write types of keys and values mapper, reducer, combiner(if any) and which of the types need to be writable. [BL: Apply| CO: 5|Marks: 7]
8. (a) Demonstrate map reduce workflow with the help of an example. Write the differences between Mapreduce combiner and reducer. [BL: Understand| CO: 5|Marks: 7]
(b) Develop the map reduce application to count the frequency of each word in an input text. [BL: Apply| CO: 5|Marks: 7]

MODULE – V

9. (a) Demonstrate Hive meta store. Which classes are used by the Hive to read and write HDFS files? Explain in detail. [BL: Understand| CO: 6|Marks: 7]
(b) Consider the student data file (st.txt), data in the following format Name, District, age, gender
i) Write a PIG script to display names of all female students
ii) Write a PIG script to find the number of students from Prakasham district
iii) Write a PIG script to display district wise count of all male students. [BL: Apply| CO: 6|Marks: 7]
10. (a) How the PIG programs can be packaged and explain the modes of running a PIG script with a neat sketch. [BL: Understand| CO: 6|Marks: 7]
(b) Write the various Hive built-in functions with syntax. Illustrate the architecture of HIVE with the help of a neat diagram. [BL: Understand| CO: 6|Marks: 7]

