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INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal-500043, Hyderabad

B.Tech VII SEMESTER END EXAMINATIONS (REGULAR) - FEBRUARY 2022

Regulation: R18

BIG DATA ANALYTICS

Time: 3 Hours

(IT)

Max Marks: 70

**Answer FIVE Questions choosing ONE question from each module
(NOTE: Provision is given to answer TWO questions from any ONE module)**

All Questions Carry Equal Marks

All parts of the question must be answered in one place only

MODULE – I

1. (a) Discuss in detail about the following:
 - i) Multivariate analysis performed in big data.
 - ii) Methods of stochastic search. [7M]
- (b) Explain about semi structured data and unstructured data in detail with examples. [7M]
2. (a) What is bigdata? Explain the process of data preparation in big data to enhance the better business decision value. [7M]
- (b) Mention any four applications where big data can be used in real time and also explain how it is used. [7M]

MODULE – II

3. (a) Explain how can we handle expectations in SQL Server. List the difference between SQL and NoSQL. [7M]
- (b) List the features of hadoop which made it popular. Explain any three features in detail. [7M]
4. (a) Explain the architecture of Hadoop technology and justify how it satisfies the business insights now-a-days? [7M]
- (b) Discuss the interacting process with Hadoop ecosystem in terms of various big data. [7M]

MODULE – III

5. (a) Mention any five Hadoop distributors and explain any two of them how they are used. [7M]
- (b) Explain in brief about the Hadoop's rack topology with the following terms:
 - i) Rack awareness
 - ii) Fault tolerance. [7M]
6. (a) Discuss racks in Hadoop cluster. Explain how Hadoop clusters are arranged in several racks with a real time example. [7M]
- (b) Explain how the namenode gets to know all the available data node in the Hadoop cluster? [7M]

MODULE – IV

7. (a) Write short notes on the following
- i) Record reader in map reduce
 - ii) Uses of map reduce. [7M]
- (b) Discuss some techniques to optimize MapReduce jobs and the points you need to consider while designing a file system in MapReduce. [7M].
8. (a) Mention the various types of input formats in map reducer and explain any three of them in detail [7M]
- (b) Illustrate with diagram about how hadoop uses HDFS staging directory as well as local directory during a job run. [7M]

MODULE – V

9. (a) List the data types used in Hive. Explain them in brief with examples. [7M]
- (b) A start-up company wants to use Hive for storing its data. Discuss a shell command in Hive to list all the files in the current directory. [7M]
10. (a) Differentiate between MapReduce and PIG. Discuss and explain PIG structure and architecture in brief. [7M]
- (b) Explain architecture of Apache Hive and various data insertion techniques in Hive with example. [7M]

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