B.TECH
(SEM VI) THEORY EXAMINATION 2022-23
BIG DATA

Time: 3 Hours   *Total Marks: 100*

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1.   **Attempt** *all* **questions in brief.**   **2 x 10 = 20**

   (a)   List any five big data platforms.
   (b)   Discus the importance of hadoop technology in big data analytics.
   (c)   Explain three benefits of MapReduce.
   (d)   Define heartbeat in HDFS.
   (e)   Define data replication in Hadoop distributed file system.
   (f)   Differentiate between flume and Sqoop.
   (g)   Compare and Contrast No SQL relational databases.
   (h)   Explain briefly about the schedulers.
   (i)   Differentiate between Pig and MapReduce.
   (j)   Discuss meta store in HIVE in brief.

SECTION B

2.   **Attempt any** *three* **of the following:**   **10x3=30**

   (a)   Explain Hadoop ecosystem in detail.
   (b)   Discuss Master Slave and Peer-Peer replication in detail.
   (c)   Examine the process of reading and writing data in HDFS by a client.
   (d)   Explain how CRUD operations with example are performed in MongoDB.
   (e)   Draw and explain the detailed architecture of HIVE.

SECTION C

3.   **Attempt any** *one* **part of the following:**   **10x1=10**

   (a) Detail about the analysis vs. reporting while introducing the Big Data
   (b) Elaborate various components of Big Data architecture.

4.   **Attempt any** *one* **part of the following:**   **10x1=10**

   (a) Discuss the detailed architecture of Map-Reduce
   (b) Discuss the detailed architecture of YARN along with its components.

5.   **Attempt any** *one* **part of the following:**   **10x1=10**

   (a) Demonstrate the design of HDFS and concept in detail.
   (b) Discuss in brief about the cluster specification. Describe how to setting up a
        Hadoop Cluster?

6. **Attempt any *one* part of the following:**   **10x1=10**

(a) State features of Apache Spark and also explain three ways of how Spark can be built with Hadoop components.

(b) State difference between Java and Scala. Also explain various features of Scala.

7. **Attempt any *one* part of the following:**   **10x1=10**

(a) Explain the architecture of HIVE. Also explain data flow in HIVE.
(b) Compare and Contrast
    (i)   Apache Pig vs Map-Reduce
    (ii)   Pig vs SQL
    (iii) Pig vs HIVE