

Enrollment No. \_\_\_\_\_



**NAVRACHANA  
UNIVERSITY**  
a UGC recognized University

**School:** School of Engineering and Technology  
**Program/s:** Data Science  
**Year:** 3<sup>rd</sup> **Semester:** 5<sup>th</sup>  
**Examination:** End Semester Examination  
**Examination year:** December - 2021

**Course Code:** DS304 **Course Name:** Big Data  
**Date:** 07/12/2021  
**Time:** 11:30 am to 01:30 pm

**Total Marks:** 40  
**Total Pages:** 2

**Instructions:**

- Write each answer on a new page.
- Use of a calculator is permitted.
- Draw all relevant waveforms in answer sheet only.
- \* COs=Course Outcome mapping. # BTL=Bloom's Taxonomy Level mapping

Q. No.	Details	Marks	COs*	BTL#
Q.1	Objective Type Questions - (All are compulsory) (Each of one mark)	10		
	1. What are the main components of Big Data? A. Map Reduce B. HDFS C. YARN D. All of these		CO1	BT1
	1. Suppose one file of size 386 MB stored in HDFS (Hadoop 2.x) using default block size configuration and default replication factor. Then, how many blocks will be created in total? A. 9 B. 12 C. 4 D. None of the mentioned		CO1	BT1
	2. Hive was originally developed by____ A. Apple B. Yahoo C. Facebook D. Google		CO2	BT2
	3. Which of the following compression technique is having highest compression ration? A. LZ0 B. Snappy C. Bzip2 D. Gzip		CO3	BT1
	4. All of the following accurately describe Hadoop, EXCEPT: A. Open-source B. Real-time C. Java-based D. Distributed computing approach		CO3	BT2

	<p>5. Point out the wrong statement</p> <p>A. Non-relational database requires that schemas be defined before you can add data.</p> <p>B. NoSQL databases are built to allow the insertion of data without a predefined schema</p> <p>C. Hbase databases are built to allow the insertion of data without a predefined schema</p> <p>D. All of the mentioned</p>		C04	BT3
	<p>6. The data node and name node in Hadoop are</p> <p>A. Worker node and Master node respectively</p> <p>B. Master node and Worker node respectively</p> <p>C. Master node</p> <p>D. Worker node</p>		C04	BT1
	<p>7. What was Hadoop named after?</p> <p>A. Creator Doug Cutting's favorite circus act</p> <p>B. Cuttings high school rock band</p> <p>C. The toy elephant of Cutting's son</p> <p>D. A sound Cutting's laptop made during Hadoop development</p>		C03	BT2
	<p>8. HDFS command to remove the file is ____</p> <p>A. -rm</p> <p>B. -remove</p> <p>C. -delete</p> <p>D. -del</p>		C04	BT3
	<p>9. Which of the following is/are the feature(s) of R?</p> <p>A. Data analytics</p> <p>B. Data visualization</p> <p>C. Relational database support</p> <p>D. All of the mentioned</p>		C05	BT1
<b>Q.2</b>	<p>Answer the following questions. (All are compulsory) (Each of one mark)</p> <p>1. YARN stands for _____.</p> <p>2. List out any two features of Avro.</p> <p>3. Define the Data locality.</p> <p>4. How Pig is different from Map Reduce?</p> <p>5. R command to Create a vector v1 with elements 1 to 20 with an increment of 2.</p> <p>6. List out the YARN components.</p> <p>7. What is Channel in Flume Architecture?</p> <p>8. An application master sends periodic _____ signals to the resource manager, and in the event of application master failure, the resource manager will detect the failure.</p> <p>9. An ordered set of fields is called bag in pig data model. (True/False)</p> <p>10. Hive is designed for OLAP. (True/False)</p>	<b>10</b>	C02, C02, C03, C03, C01, C01, C02, C01, C03, C02, C02	BT6, BT4, BT2, BT3, BT1, BT1, BT1, BT3, BT3, BT6, BT1
<b>Q.3</b>	<p>Answer the following questions. (Attempt any five) (Each of two mark)</p> <p>1. Write a Short note on Scoop.</p> <p>2. List Types of Big Data and Give appropriate example.</p> <p>3. What is big data? Discuss it in terms of velocity.</p> <p>4. Explain the parser in Pig architecture.</p> <p>5. Write differences between RDBMS and HBase?</p> <p>6. Describe the Fault Tolerance in HDFS.</p>	<b>10</b>	C02, C03, C02, C04, C02, C03	BT3, BT4, BT2, BT3, BT1, BT1
<b>Q.4</b>	Explain HDFS Architecture and its Components with proper diagram.	<b>5</b>	C03	BT2
<b>Q.5</b>	<p>Explain working of following phases of Map Reduce with one common example.</p> <p>Map Phase</p> <p>Combiner Phase</p> <p>Shuffle and Sort Phase</p> <p>Reducer Phase</p>	<b>5</b>	C04	BT1