Printed Page:-03 **Subject Code**:- **AMICSAI0621**

Roll. No:

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

M.Tech(Integrated)

SEM: VI - THEORY EXAMINATION (2024-2025)

Subject: Big Data

Time: 3 Hours **Max. Marks: 100**

General Instructions:

IMP: *Verify that you have received the question paper with the correct course, code, branch etc.*

1. *This Question paper comprises of* ***three Sections -A, B, & C.*** *It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.*

2. *Maximum marks for each question are indicated on right -hand side of each question.*

3. *Illustrate your answers with neat sketches wherever necessary.*

4. *Assume suitable data if necessary.*

5. *Preferably, write the answers in sequential order.*

6. *No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.*

COP:JULY_DEC-2024

SECTION-A 20

1. Attempt all parts:-

1-a. This data is created using a fixed schema and is maintained in tabular format (CO1) 1

(a) Structured data
(b) Unstructured data
(c) Semi structured data
(d) None of the above.

1-b. The main components of big data (CO1) 1

(a) HDFS
(b) Map Reduce
(c) Yarn
(d) All of the above

1-c. HDFS files cannot be (CO2) 1

(a) read
(b) deleted
(c) executed
(d) archived

1-d. Every TaskTracker is configured with a _____ .(CO2) 1

(a) Maximum memory available in the node
(b) Not limited

.

(c) set of slots

(d) As decided by the job tracker

1-e. Which one is taking a set of data and converted into another set of data? (CO3) 1

(a) Reduce stage

(b) Shuffling stage

(c) Map stage

(d) Shuffling and sorting

1-f. Hadoop streaming allows running map reduce program in which of the languages are used (CO3) 1

(a) R

(b) Python

(c) Pearl

(d) All of the above

1-g. It is not a property of cloud computing (CO4) 1

(a) virtualization

(b) composability

(c) scalability

(d) all of the mentioned

1-h. Which of these an example of SaaS? (CO4) 1

(a) Google Workspace

(b) Dropbox

(c) Salesforce

(d) All of the above

1-i. The uses of subnetting. CO5 1

(a) It divides one large network into several smaller ones

(b) It divides network into network classes

(c) It speeds up the speed of network

(d) None of above

1-j. The combination of _____ and _____ is often termed the local address of the local portion of the IP address. (CO5) 1

(a) Network number and host number

(b) Network number and subnet number

(c) Subnet number and host numbe

(d) Host number

2. Attempt all parts:-

2.a. Explain types of Big data. (CO1) 2

2.b. Explain the limitation of traditional approach in big data process? (CO2) 2

2.c. Can you explain the components of HDFS architecture.(CO3) 2

.

COP-JULY_DEC-2024

2.d.	Define Cloud. (CO4)	2
2.e.	State Virtual Private cloud. CO5	2

SECTION-B 30

3. Answer any five of the following:-

3-a.	Can you explain the digital data types and describe the data classification features? (CO1)	6
3-b.	Define principles of Big Data ethics. (CO2)	6
3-c.	How would you present the apache hadoop functions? (CO2)	6
3-d.	Define HDFS. Also explain components of hadoop. (CO2)	6
3.e.	Draw and explain the components of HDFS architecture in detail.CO3	6
3.f.	Define open stack. Also define it's components. (CO4)	6
3.g.	Explain in detail the concept of Subneting. Explain. (CO5)	6

SECTION-C 50

4. Answer any one of the following:-

4-a.	Draw the big data architecture diagram and explain its components. (CO1)	10
4-b.	Explain in detail about the cloud computing evolution and draw its proper diagram? (CO1)	10

5. Answer any one of the following:-

5-a.	Rank the importance of the HDFS and Demonstrate the HDFS architecture. (CO2)	10
5-b.	Can you explain in detail about the HDFS architecture. (CO2)	10

6. Answer any one of the following:-

6-a.	Can you explain how Apache Spark is used? (CO3)	10
6-b.	Explain the role of following nodes in detail: (i) Datanode (ii) NodeManager (iii) Job Tracker (iv) Task Tracker (v) NameNode (CO3)	10

7. Answer any one of the following:-

7-a.	Differentiate between public, private and hybrid cloud and explain its both properties? (CO4)	10
7-b.	List out features and challenges of GCP and explain in detail the features of any four services provided by GCP? (CO4)	10

8. Answer any one of the following:-

8-a.	Define what is Datastore? Explain Cloud Datastore concept.CO5	10
8-b.	Discuss the BigTable concept in cloud with an example? (CO5)	10

COP JULY_DEC 2024

.