**Code No: R20A0522** **R20**

# MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

**(Autonomous Institution – UGC, Govt. of India)**

## IV B.Tech I Semester Regular Examinations, October/November 2023

**Block Chain Technology**

**(CSE, IT, CSE-CS, CSE-DS & CSE-IOT)**

| Roll No | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|

**Time: 3 hours** **Max. Marks: 70**

**Note:** This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

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**SECTION-I**

| | | | |
|---|---|---|---|
| **1** | ***A*** | Write short notes on routes to decentralization? | **[7M]** |
| | ***B*** | Distinguish between centralized, decentralized and distributed system? | **[7M]** |
| | | OR | |
| **2** | ***A*** | Explain decentralization frame work with your own example? | **[7M]** |
| | ***B*** | Analyze the CAP theorem and illustrate the methods of decentralization in detail? | **[7M]** |

**SECTION-II**

| | | | |
|---|---|---|---|
| **3** | ***A*** | List and explain the different services of cryptography with neat diagram in Block chain? | **[7M]** |
| | ***B*** | What is the need of Consensus Algorithms in Blockchain and explain Proof-of-Work (PoW) and Proof-of-Burn(PoB) algorithms in detail? | **[7M]** |
| | | OR | |
| **4** | ***A*** | Analyze Asymmetric Cryptography in Blockchain? | **[7M]** |
| | ***B*** | Explain Bitcoin improvement proposals (BIPs)? | **[7M]** |

**SECTION-III**

| | | | |
|---|---|---|---|
| **5** | ***A*** | Explain in detail about the structure of a block in Bitcoin Blockchain? | **[7M]** |
| | ***B*** | Explain the transaction data structure with suitable example? | **[7M]** |
| | | OR | |
| **6** | ***A*** | Discuss about bitcoin investment with an example? | **[7M]** |
| | ***B*** | What is the genesis block? Illustrate the hardcoded in the bitcoin core software? | **[7M]** |

**SECTION-IV**

| | | | |
|---|---|---|---|
| **7** | ***A*** | Illustrate the Elements of Ethereum blockchain with an example? | **[7M]** |
| | ***B*** | Analyze the Ether with Ethereum Network? | **[7M]** |
| | | OR | |
| **8** | ***A*** | What is Ethereum network? Explain its three types? | **[7M]** |
| | ***B*** | Write about mining systems and CPU? | **[7M]** |

**SECTION-V**

| | | | |
|---|---|---|---|
| **9** | ***A*** | Interpret the Projected Issues in Smart Contracts and Centralization in Block chains? | **[7M]** |
| | ***B*** | Explain Architecture of Hyperledger. | **[7M]** |
| | | OR | |
| **10** | ***A*** | List and explain Requirements and design goals of Hyperledger Fabric? | **[7M]** |
| | ***B*** | Privacy and confidentiality of transactions and contracts are of absolute importance in a business blockchain? Why? Explain? | **[7M]** |

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**R20**

**Code No: R20A6908**

# MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

**(Autonomous Institution – UGC, Govt. of India)**

## IV B.Tech I Semester Regular Examinations, October/November 2023

**Adhoc and Sensor Networks**

**(CSE)**

| Roll No | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|

**Time: 3 hours** **Max. Marks: 70**

**Note:** This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

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**SECTION-I**

| | | | |
|---|---|---|---|
| **1** | ***A*** | In what ways can MANETs enhance communication and collaboration in outdoor recreational activities, such as hiking and camping? | **[7M]** |
| | ***B*** | What challenges and opportunities do MANETs present in the context of vehicular communication and autonomous vehicles? | **[7M]** |
| | | OR | |
| **2** | ***A*** | What is the fundamental difference between proactive (table-driven) and reactive (on-demand) routing protocols in MANETs? | **[7M]** |
| | ***B*** | What are the key challenges associated with routing in MANETs compared to traditional wired networks? | **[7M]** |

**SECTION-II**

| | | | |
|---|---|---|---|
| **3** | ***A*** | What are the challenges related to data transmission in highly dynamic ad hoc network environments? | **[7M]** |
| | ***B*** | Describe about Multicasting in Ad-Hoc networks? | **[7M]** |
| | | OR | |
| **4** | ***A*** | What role does Quality of Service (QoS) play in multicast communication within ad hoc networks, and how is it achieved? | **[7M]** |
| | ***B*** | Can you discuss the trade-offs between application-layer and network-layer multicast approaches in ad hoc networks? | **[7M]** |

**SECTION-III**

| | | | |
|---|---|---|---|
| **5** | ***A*** | What are the advantages of using geo-casting in scenarios where location-based communication is essential? | **[7M]** |
| | ***B*** | What are the key challenges in developing accurate and reliable location-awareness mechanisms for geo-casting? | **[7M]** |
| | | OR | |
| **6** | ***A*** | Describe about Impact of Lower Layers On TCP. | **[7M]** |
| | ***B*** | What are the challenges in achieving interoperability between different data link layer technologies and TCP variants in heterogeneous sensor network deployments? | **[7M]** |

**SECTION-IV**

| | | | |
|---|---|---|---|
| **7** | ***A*** | What are the fundamental differences between wired and wireless communication? | **[7M]** |
| | ***B*** | Explain the architecture of sensor networks. | **[7M]** |
| | | OR | |
| **8** | ***A*** | Explain the application of wireless sensor networks in detail. | **[7M]** |
| | ***B*** | Enumerate and classify the sensor networks and briefly explain about physical layer and mac layer. | **[7M]** |

**SECTION-V**

| | | | |
|---|---|---|---|
| **9** | ***A*** | Explain the issues and characteristics related to transport layer in WSN | **[7M]** |
| | ***B*** | Describe the concept of distributed query processing at application layer | **[7M]** |
| | | OR | |
| **10** | ***A*** | Explain thee routing challenges and design issues mobile robots. | **[7M]** |
| | ***B*** | Describe about Sensor Networks and mobile robots. | **[7M]** |

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**R20**

**Code No: R20A6703**

# MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

**(Autonomous Institution – UGC, Govt. of India)**

## IV B.Tech I Semester Regular Examinations, October/November 2023

**Data Science**

**(CSE)**

| Roll No | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|

**Time: 3 hours** **Max. Marks: 70**

**Note:** This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

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**SECTION-I**

| | | | |
|---|---|---|---|
| **1** | ***A*** | Discuss about control structures with illustration. | **[7M]** |
| | ***B*** | Explain briefly about roles and phases in DS Project | **[7M]** |
| | | OR | |
| **2** | ***A*** | Explain about data types with illustration in R. | **[10M]** |
| | ***B*** | Explain about named arguments, default parameters, return values and also write a program to demonstrate passing arguments to a function. | **[4M]** |

**SECTION-II**

| | | | |
|---|---|---|---|
| **3** | ***A*** | Illustrate about data manipulation packages data.table, reshape2, tidyr and lubridate with simple programs. | **[7M]** |
| | ***B*** | Explain about working with relational databases and also explain about data manipulation package dplyr. | **[7M]** |
| | | OR | |
| **4** | ***A*** | What is reading in larger datasets with read.table and explain it with appropriate illustration. | **[7M]** |
| | ***B*** | Explain reading and writing data, reading data files with read.table () with appropriate illustration. | **[7M]** |

**SECTION-III**

| | | | |
|---|---|---|---|
| **5** | ***A*** | Differentiate between evaluating scoring models and evaluating probability model. | **[9M]** |
| | ***B*** | Discuss about choosing and evaluating Models Mapping problems to machine learning tasks with appropriate illustration. | **[5M]** |
| | | OR | |
| **6** | ***A*** | Explain about working without known targets and problem-to-method mapping with illustration. | **[4M]** |
| | ***B*** | Write a short note on over fitting, measures of model performance and evaluating classification models. | **[10M]** |

**SECTION-IV**

| | | | |
|---|---|---|---|
| **7** | ***A*** | Describe about understanding linear regression and Understanding logistic regression | **[4M]** |
| | ***B*** | Discuss about building a logistic regression model and making predictions. | **[10M]** |
| | | OR | |
| **8** | ***A*** | Write a R script to calculate regression coefficient. | **[4M]** |
| | ***B*** | Explain about building a Linear regression model and making predictions. | **[10M]** |

## SECTION-V

| | | | |
|---|---|---|---|
| **9** | ***A*** | What is data visualization with R and explain about ggplot2 with appropriate illustration. | **[7M]** |
| | ***B*** | Differentiate between multivariate graphs and bivariate graphs. | **[7M]** |
| | | OR | |
| **10** | ***A*** | Differentiate between univariate graphs and bivariate graphs. | **[7M]** |
| | ***B*** | Describe about placing the data, mapping options and graphs as objects. | **[7M]** |

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**R20**

**Code No: R20A0521**

# MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

**(Autonomous Institution – UGC, Govt. of India)**

## IV B.Tech I Semester Regular Examinations, October/November 2023

**Cloud Computing**

**(CSE, IT, CSE-CS, CSE-AIML, CSE-DS & CSE-IOT)**

| Roll No | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|

**Time: 3 hours** **Max. Marks: 70**

**Note:** This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

***

**SECTION-I**

| | | | |
|---|---|---|---|
| **1** | ***A*** | Define Cloud Computing. Explain the characteristics of Cloud Computing. | **[7M]** |
| | ***B*** | Explain in detail the underlying principles of Distributed Computing. | **[7M]** |
| | | OR | |
| **2** | ***A*** | List out and explain various features of IaaS and PaaS. | **[7M]** |
| | ***B*** | Illustrate and explain the roots of Cloud Computing. | **[7M]** |

**SECTION-II**

| | | | |
|---|---|---|---|
| **3** | ***A*** | With a neat sketch explain about the Seven Step Model of Migration into Cloud. | **[7M]** |
| | ***B*** | Discuss about different types of Virtualization. | **[7M]** |
| | | OR | |
| **4** | ***A*** | Define Virtualization and List out different types of Virtualizations in Cloud. | **[7M]** |
| | ***B*** | Write about differences between virtualization and cluster technologies. | **[7M]** |

**SECTION-III**

| | | | |
|---|---|---|---|
| **5** | ***A*** | Explain about different stages of Live Migration. | **[7M]** |
| | ***B*** | Describe different technologies and tools are used for cloud computing. | **[7M]** |
| | | OR | |
| **6** | ***A*** | Explain the virtual machine provision process. | **[7M]** |
| | ***B*** | With a neat diagram, explain in detail about the architecture of ANEKA framework. | **[7M]** |

**SECTION-IV**

| | | | |
|---|---|---|---|
| **7** | ***A*** | What is Saas? Explain in detail about Saas Maturity Model. | **[7M]** |
| | ***B*** | Write about the technologies for data security in cloud computing. | **[7M]** |
| | | OR | |
| **8** | ***A*** | Explain the features of Google App Engine. | **[7M]** |
| | ***B*** | What Is an Information Card? Explain Weakness and Strengths of Information Cards. | **[7M]** |

**SECTION-V**

| | | | |
|---|---|---|---|
| **9** | ***A*** | List out Key contractual components of an application SLA. Explain. | **[7M]** |
| | ***B*** | Explain the steps involved in on-boarding of application on the cloud. | **[7M]** |
| | | OR | |
| **10** | | Explain in detail about the phases of SLA life cycle. | **[14M]** |

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**R20**

**Code No: R20A0520**

# MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

**(Autonomous Institution – UGC, Govt. of India)**

## IV B.Tech I Semester Regular Examinations, October/November 2023

**Big Data Analytics**

**(CSE, IT & CSE-AIML)**

| Roll No | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|

**Time: 3 hours** **Max. Marks: 70**

**Note:** This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

***

**SECTION-I**

| | | | |
|---|---|---|---|
| **1** | ***A*** | Explain different types of digital data with suitable examples. | **[7M]** |
| | ***B*** | Explain big data analytics, along with its types, in detail with suitable examples. | **[7M]** |
| | | OR | |
| **2** | ***A*** | Discuss the 3V's of big data with suitable examples. | **[7M]** |
| | ***B*** | Discuss the challenges of Big Data in detail. | **[7M]** |
| | | **SECTION-II** | |
| **3** | ***A*** | Compare and contrast Hadoop with RDBMS in detail. | **[7M]** |
| | ***B*** | Explain the core components of Hadoop in detail. | **[7M]** |
| | | OR | |
| **4** | ***A*** | Discuss the design principles of Hadoop. | **[4M]** |
| | ***B*** | Explain the steps to write a file into HDFS with a neat diagram. | **[10M]** |
| | | **SECTION-III** | |
| **5** | ***A*** | What is MapReduce? How does it differ from sequential processing? | **[4M]** |
| | ***B*** | Explain the different phases of MapReduce workflow in detail with a neat sketch. | **[10M]** |
| | | OR | |
| **6** | ***A*** | Discuss the various types of NoSQL databases with suitable examples. | **[7M]** |
| | ***B*** | Discuss the architecture of YARN with a neat diagram. | **[7M]** |
| | | **SECTION-IV** | |
| **7** | ***A*** | Compare SQL, NoSQL and NewSQL. | **[6M]** |
| | ***B*** | Explain how to perform operations like counting, sorting, limiting, skipping, and aggregating data in MongoDB. | **[8M]** |
| | | OR | |
| **8** | ***A*** | Discuss the Create, Read, Update, and Delete (CRUD) operations in Cassandra and provide examples of each operation | **[10M]** |
| | ***B*** | Discuss the import and export mechanisms available in Cassandra. | **[4M]** |
| | | **SECTION-V** | |
| **9** | ***A*** | Discuss output formats in MapReduce programming. | **[6M]** |
| | ***B*** | Explain Map Reduce program count number of words in a file. | **[8M]** |
| | | OR | |
| **10** | ***A*** | What is Apache Spark? Explain how it works with a neat diagram. | **[7M]** |
| | ***B*** | Given an RDD of numbers, filter out even numbers and then square each remaining number. Print the resulting RDD. | **[7M]** |

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