Code No: R18A0530

R18

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

IV B.Tech - II Semester Advance Supplementary Examinations, July 2024

Parallel and Distributed Computing

(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***	What are the applications of parallel computing? Discuss the physical organisation of parallel platforms?	**[4M]**
	B	Illustrate the Superscalar execution with an example?	**[10M]**
		OR	
2	***A***	How to evaluate static and dynamic interconnection networks?	**[7M]**
	B	Write about Cache Coherence in Multiprocessor Systems with neat sketch?	**[7M]**
		SECTION-II	
3	***A***	What is static mapping? Explain Schemes for Dynamic Mapping ?	**[7M]**
	B	Classify the characteristics of Tasks and Interactions?	**[7M]**
		OR	
4	***A***	Explain data decomposition with an example?	**[7M]**
	B	Why do we need CUDA? Explain its architecture?	**[7M]**
		SECTION-III	
5	***A***	Predict the effect of Granularity on Performance for four processing elements simulating 16 processing elements to compute the sum of 16 numbers. $\sum$ denotes the sum of numbers with consecutive labels from i to j . Four processing elements simulating 16 processing elements to compute the sum of 16 numbers.	**[7M]**
	B	Describe the Performance Metrics for Parallel Systems	**[7M]**
		OR	
6	***A***	Why is performance extrapolation so difficult? Explain Scaling Characteristics of Parallel Programs?	**[7M]**
	B	Summerize the Isoefficiency Metric of Scalability?	**[7M]**
		SECTION-IV	
7	***A***	Explain Matrix-Matrix Multiplication with an algorithm and an example	**[7M]**
	B	Describe row wise 1-D Partitioning?	**[7M]**
		OR	
8	***A***	Explain the bubble sort mechanism with an example	**[7M]**
	B	Demonstrate the issues in sorting on parallel computers	**[7M]**
		SECTION-V	
9	***A***	Explain the unstructured nature of tree search and the imbalance resulting from static partitioning with neat sketch	**[7M]**
	B	Explain the Communication Strategies for Parallel Best-First Tree Search	**[7M]**
		OR	
10	***A***	Illustrate analysis of Average Speed up in Parallel DFS	**[7M]**
	B	Simulate Best-first search with the 8-puzzle problem	**[7M]**

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Code No: R18A0534

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

IV B.Tech - II Semester Advance Supplementary Examinations, July 2024

Block Chain Technology

(CSE & IT)

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		Explain in detail about centralized, decentralized and distributed systems with a neat diagram?	**[14M]**
		OR	
2	A	Illustrate CAP theorem in detail.	**[7M]**
	B	Briefly explain decentralization frame work with an example.	**[7M]**

SECTION-II

3	A	Demonstrate the Asymmetric Cryptography in Block chain.	**[7M]**
	B	Discuss in detail about Bitcoin improvement proposals (BIPs).	**[7M]**
		OR	
4	A	Illustrate the differences between Public and private keys.	**[7M]**
	B	Describe Proof-of-Work (PoW) and Proof-of-Burn (PoB) algorithms in detail.	**[7M]**

SECTION-III

5		Define Bitcoin. Describe the working mechanism of Bitcoin with transaction and structure.	**[14M]**
		OR	
6		Summarize Bitcoin investment and buying and selling bitcoins.	**[14M]**

SECTION-IV

7	A	Write notes on Precompiled Contracts.	**[7M]**
	B	Explain in detail about usage of Ether in Etherium network.	**[7M]**
		OR	
8		What do you mean by Mining? Illustrate various types and components of mining process in detail.	**[14M]**

SECTION-V

9		What is Hyperledger? Illustrate the reference architecture services of hyperledger with neat sketch and explain each component.	**[14M]**
		OR	
10		Design corda architecture with neat sketch and discuss about each application with example	**[14M]**

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R18

Code No: R18A0529

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

IV B.Tech - II Semester Advance Supplementary Examinations, July 2024

Big Data Analytics

(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***	What is Big Data? Describe the various characteristics and advantages of using Big Data.	**[8M]**
	B	Describe with their features the following Big Data Tools i) Apache Spark ii) Mongo DB	**[6M]**
		OR	
2	***A***	Illustrate with an example and advantages for each of the following analytics models. i) Predictive Analytics ii) Diagnostic Analytics	**[7M]**
	B	Compare and Contrast traditional Business Intelligence and Big Data.	**[7M]**

SECTION-II

3	***A***	Differentiate between SQL and NoSQL.	**[7M]**
	B	Demonstrate with a neat sketch Hadoop Architecture for distributed computing.	**[7M]**
		OR	
4	***A***	What is HDFS? What kind of challenges associated in implementing distributed computing.	**[7M]**
	B	Describe the role of HDFS and HBase in Hadoop environment.	**[7M]**

SECTION-III

5	***A***	Describe the advantages of MongoDB over RDBMS. List the applications in which MongoDB is used.	**[7M]**
	B	Illustrate with example how to query system tables.	**[7M]**
		OR	
6	***A***	Identify the various CQL data types in Cassandra.	**[6M]**
	B	What is the use of find() and pretty() methods in MongoDB ? Demonstrate with an example.	**[8M]**

SECTION-IV

7	***A***	Explain the following components in MapReduce. i) Mapper ii) Reducer iii) Combiner	**[9M]**
	B	Write the syntax to define a user defined function in HIVE? Illustrate with an example.	**[5M]**

OR

8	***A***	Explain with a neat sketch the architecture of HIVE? List the features of it.	**[8M]**
	B	How do group by and having is performed in retrieving data in Hive environment? Explain with a suitable example.	**[6M]**

SECTION-V

9	***A***	Why do we use Pig in distributed environment? Demonstrate the various features of it.	**[6M]**
	B	How to define the user defined function in PIG? Explain with an example how parameter substitution is done for a function.	**[8M]**

OR

10	***A***	Explain the following Eval functions in Pig. i) CONCAT() ii) COUNT_STAR() iii) DIFF() iv) MAX()	**[8M]**
	B	Compare and Contrast the PIG and HIVE in distributed environment.	**[6M]**

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