DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
Regular/Supplementary Winter Examination-2023

Course: B. Tech.   **Branch: Computer Engineering/CSE**   **Semester: VII**

Subject Code & Name: Artificial Intelligence (BTCOC701)

Max Marks: 60   **Date: 02/01/2024**   **Duration: 3 Hr.**

Instructions to the Students:
1. *All the questions are compulsory.*
2. *The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.*
3. *Use of non-programmable scientific calculators is allowed.*
4. *Assume suitable data wherever necessary and mention it clearly.*

		(Level/CO)	Marks
Q. 1	**Solve Any Two of the following.**		**12**
A)	**Elaborate Artificial intelligence with suitable example along with it's application.**	**Analyze**	**6**
B)	**Discuss the historical evaluation of Artificial Intelligence.**	**Understand**	**6**
C)	**State the relationship between Agent and Environment.**	**Remember**	**6**
Q.2	**Solve Any Two of the following.**		**12**
A)	**Give the outline of Uniform cost search algorithm.**	**Apply**	**6**
B)	**Explain A* algorithm for the shortest path.**	**Understand**	**6**
C)	**What is alpha-beta pruning? Explain the function of alpha-beta pruning.**	**Understand**	**6**
Q. 3	**Solve Any Two of the following.**		**12**
A)	**Explain the production based knowledge representation technique.**	**Understand**	**6**
B)	**Give outline of simple forward Chaining algorithm with suitable example.**	**Remember**	**6**
C)	**What is planning? What is need of planning.**	**Understand**	**6**
Q.4	**Solve Any Two of the following.**		**12**
A)	**Compare and contrast the following:** **Forward Vs. Backward Reasoning**	**Remember**	**6**
B)	**Explain Bayesian Network.**	**Understand**	**6**
C)	**What is fuzzy set? Explain degree of membership. How does are represent a fuzzy set in a computer.**	**Apply**	**6**

Q. 5	Solve Any Two of the following.		12
A)	What is Natural Language Processing? Explain various types of NLP techniques.	Understand	6
B)	What is Expert system? Explain its Architecture, Features & applications.	Understand	6
C)	Comparison between Syntactic Processing & Semantic Processing.	Remember	6

*** End ***

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Regular & Supplementary Winter Examination-2023

Course: B. Tech.   **Branch: Computer Engineering/CSE**   **Semester: VII**

Subject Code & Name: Big Data Analytics [BTCOE703(C)]

Max Marks: 60   **Date:06-01-24**   **Duration: 3 Hr.**

Instructions to the Students:
1. *All the questions are compulsory.*
2. *The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.*
3. *Use of non-programmable scientific calculators is allowed.*
4. *Assume suitable data wherever necessary and mention it clearly.*

		(Level/ CO)	Marks
Q. 1	**Solve Any Two of the following.**		**12**
A)	Enlist and explain in brief the motivation behind emergence of Big Data?	CO1	
B)	Identify and discussed the two major challenges associated with Big Data processing.	CO1	
C)	Explain Big Data stack with suitable example.	CO1	
Q.2	**Solve the following Questions.**		**12**
A)	Define and explain HDFS. Explain its role in Big Data Ecosystem.	CO2	
B)	Explain the functionalities of YARN in the context of big data processing.	CO2	
Q. 3	**Solve Any Two of the following.**		**12**
A)	Explain in brief the key features of spark streaming.	CO3	
B)	Explain in detail the role of KAFKA in building real time data pipeline.	CO3	
C)	Write a note on the significance of big data streaming platforms in handling big data.	CO3	
Q.4	**Solve the following Questions.**		**12**
A)	Why machine learning is important in the context of Big Data.	CO4	
B)	Compare Spark GraphX and Giraph in the context of graph processing.	CO4	
Q. 5	**Solve the following Questions.**		**12**
A)	Discuss the advantages of using the JavaScript shell for MongoDB queries.	CO5	**6**
B)	Explain the syntax and structure of the MongoDB query language. Provide an example of a complex query in MongoDB.	CO5	**6**

\#\#\#\# End \#\#\#\#\#

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Regular & Supplementary Winter Examination-2023

Course: B. Tech.   **Branch : CSE/CE**   **Semester : VII**

Subject Code & Name: BTCOE704 (B): Business Intelligence

Max Marks: 60   **Date:09-01-24**   **Duration: 3 Hr.**

Instructions to the Students:
1. *All the questions are compulsory.*
2. *The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.*
3. *Use of non-programmable scientific calculators is allowed.*
4. *Assume suitable data wherever necessary and mention it clearly.*

		(Level/CO)	Marks
Q. 1	**Solve Any Two of the following.**		**12**
A)	What is Business Intelligence? Explain in detail.	Remember	6
B)	Write a note on Architecture of BI.	Analyze	6
C)	Explain life cycle of BI.	Understand	6
Q.2	**Solve Any Two of the following.**		**12**
A)	Draw the block diagram of a general view of BI environment and explain it	Analyze	6
B)	Explain the concept of team building for successful implementation of BI solutions.	Understand	6
C)	Explain the phases in the development of a business intelligence system with suitable diagram.	Understand	6
Q. 3	**Solve Any Two of the following.**		**12**
A)	Describe the phases of Decision making process in detail	Understand	6
B)	What are the types of decisions? Explain.	Remember	6
C)	Examine the Approaches for Decision Making process.	Evaluate	6
Q.4	**Solve Any Two of the following.**		**12**
A)	Differentiate between OLTP and OLAP	Evaluate	6
B)	Write a note on Data Warehouse Architecture.	Analyze	6
C)	Describe the following schemas – (a) Star Schema (b) Snowflake Schema	Understand	6
Q. 5	**Solve Any Two of the following.**		**12**
A)	What is Data Mining? Explain in detail.	Remember	6
B)	Discuss the applications of Data Mining	Understand	6
C)	Draw and Explain data Mining process	Understand	6

*** End ***

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Regular & Supplementary Winter Examination-2023

Course: B. Tech.   **Branch : CSE/CE**   **Semester : VII**

Subject Code & Name: BTCOE704 (B): Business Intelligence

Max Marks: 60   **Date:09-01-24**   **Duration: 3 Hr.**

Instructions to the Students:
1. *All the questions are compulsory.*
2. *The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.*
3. *Use of non-programmable scientific calculators is allowed.*
4. *Assume suitable data wherever necessary and mention it clearly.*

		(Level/CO)	Marks
Q. 1	**Solve Any Two of the following.**		**12**
A)	What is Business Intelligence? Explain in detail.	Remember	6
B)	Write a note on Architecture of BI.	Analyze	6
C)	Explain life cycle of BI.	Understand	6
Q.2	**Solve Any Two of the following.**		**12**
A)	Draw the block diagram of a general view of BI environment and explain it	Analyze	6
B)	Explain the concept of team building for successful implementation of BI solutions.	Understand	6
C)	Explain the phases in the development of a business intelligence system with suitable diagram.	Understand	6
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B)	What are the types of decisions? Explain.	Remember	6
C)	Examine the Approaches for Decision Making process.	Evaluate	6
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B)	Write a note on Data Warehouse Architecture.	Analyze	6
C)	Describe the following schemas – (a) Star Schema (b) Snowflake Schema	Understand	6
Q. 5	**Solve Any Two of the following.**		**12**
A)	What is Data Mining? Explain in detail.	Remember	6
B)	Discuss the applications of Data Mining	Understand	6
C)	Draw and Explain data Mining process	Understand	6

*** End ***

Course: B. Tech.   Branch : Computer Science & Engineering/Computer Engg   **Semester :VII**

Subject Code & Name: BTCOC702 Cloud Computing

Max Marks: 60   **Date:04-01-24**   **Duration: 3 Hr.**

Instructions to the Students:

1. *All the questions are compulsory.*
2. *The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.*
3. *Use of non-programmable scientific calculators is allowed.*
4. *Assume suitable data wherever necessary and mention it clearly.*

		(Level/CO)	Marks
Q. 1	**Solve Any Two of the following.**		**12**
A)	Explain types of scaling in cloud computing .Sate benefits and limitations of cloud computing.	**CO1**	**6**
B)	What is Virtualization? Explain types of virtualization.	**CO2**	**6**
C)	Explain the challenges and benefits of cloud computing	**CO2**	**6**
Q.2	**Solve Any Two of the following.**		**12**
A)	Explain open challenges for implementing cloud computing technology.	**CO2**	**6**
B)	What cloud providers does for Iaas? Explain scope of between provider and consumer.	**CO2**	**6**
C)	Explain transactional integrity through stored procedure.	**CO3**	**6**
Q. 3	**Solve Any Two of the following.**		**12**
A)	What is DBaaS? Explain DBaaS benefits.	**CO3**	**6**
B)	Explain the concept of capacity planning in the context of cloud scaling.	**CO3**	**6**
C)	Explain disaster recovery planning with risks and benefits.	**CO4**	**6**
Q.4	**Solve Any Two of the following.**		**12**
A)	Describe and classify services installed in the Aneka container.	**CO3**	**6**
B)	Explain resource reservation service in Aneka.	**CO4**	**6**
C)	Explain logical organization of Aneka cloud.	**CO5**	**6**
Q. 5	**Solve Any Two of the following.**		**12**
A)	How cloud computing can be applied to support E-health and Telemedicine.	**CO5**	**6**
B)	Explain Amazon EC2 and its basic features & related services.	**CO4**	**6**
C)	What are Dropbox and iCloud ?Which types of problem do they solved by using cloud technologies.	**CO5**	**6**

*** End ***

Course: B. Tech.	Branch : Computer Engineering/CSE	Semester : VII
Subject Code & Name: BTCOC702 – Cloud Computing		
Max Marks: 60	Date: 04/01/2024	Duration: 3 Hr.

Instructions to the Students:
1. *All the questions are compulsory.*
2. *The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.*
3. *Use of non-programmable scientific calculators is allowed.*
4. *Assume suitable data wherever necessary and mention it clearly.*

		(Level/CO)	Marks
Q. 1	**Solve Any Two of the following.**		**12**
A)	Highlight three challenges organizations may face when migrating to the cloud and suggest potential solutions.	Understand, Analyze	6
B)	Define and compare the pay-as-you-go and subscription economic models in cloud computing.	Understand, Remember	6
C)	Differentiate between Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS).	Understand, Apply	6
Q.2	**Solve Any Two of the following.**		**12**
A)	Discuss the significance of data centers in supporting the expanding demands of cloud services.	Understand, Apply	6
B)	Explain the role of cloud management in overseeing and optimizing cloud infrastructure.	Remember, Knowledge	6
C)	Discuss the primary requirements that influence the design of a data center for cloud infrastructure.	Understand, Analyze	6
Q. 3	**Solve Any Two of the following.**		**12**
A)	Define virtualization and briefly explain how it enables the efficient utilization of computing resources.	Understand, Remember	6
B)	Explain how SDN decouples the control plane and data plane in network infrastructure.	Knowledge, Analyze	6
C)	Explain how virtualization contributes to the scalability and efficiency of cloud-based services.	Understand, Analyze	6
Q.4	**Solve Any Two of the following.**		**12**
A)	Identify and explain two challenges that organizations may face in implementing and managing cloud storage solutions.	Analyze, Remember	6
B)	Provide a brief comparison between the data models of HBase, MongoDB, Cassandra, and DynamoDB.	Understand, Analyze	6
C)	Explain the concept of cloud storage and how it differs from traditional on-premises storage solutions.	Knowledge, Remember	6
Q. 5	**Solve Any Two of the following.**		**12**
A)	Explain the basic architecture of Amazon S3, including its storage classes and access control features.	Knowledge Understand	6
B)	Define cloud object storage and explain its fundamental principles in comparison to traditional storage models.	Understand, Remember	6
C)	Discuss the factor that organizations should consider when choosing between the cloud object storage services.	Understand, Apply	6

*** End ***

	DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE		
	Regular & Supplementary Winter Examination-2023		
	Course: B. Tech. Branch :Computer and Allied		
	Semester :VII		
	Subject Code & Name: Deep Learning (BTCOE705B)		
	Max Marks: 60 Date:11/01/2024 Duration: 3 Hr.		

Instructions to the Students:
1. *All the questions are compulsory.*
2. *The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.*
3. *Use of non-programmable scientific calculators is allowed.*
4. *Assume suitable data wherever necessary and mention it clearly.*

		(Level/CO)	Marks
Q. 1	**Solve Any Two of the following.**		**12**
A)	**Explain the following steps involved in machine learning.** **(i) Preprocessing (ii)Segmentation (iii)Feature Extraction.**	**Understand**	**6**
B)	**How data is classified using Bayes classifier?**	**Analyze**	**6**
C)	**Distinguish between supervised and unsupervised machine learning.**	**Analyze**	**6**
Q.2	**Solve Any Two of the following.**		**12**
A)	**What is neuron? Explain structure of biological neuron.**	**Remember**	**6**
B)	**Explain how XOR function is implemented using NAND, OR and AND functions in neural networks.**	**Apply**	**6**
C)	**Explain architecture of feed forward neural network with necessary convention.**	**Understand**	**6**
Q. 3	**Solve Any Two of the following.**		**12**
A)	**What is back propagation learning?**	**Remember**	**6**
B)	**Explain architecture of multilayer perceptron.**	**Remember**	**6**
C)	**How are weights updated at output layer in multilayer neural network?**	**Understand**	**6**
Q.4	**Solve Any Two of the following.**		**12**
A)	**What is Autoencoder? Explain undercomplete and sparse autoencoders in detail.**	**Remember**	**6**
B)	**Explain function of different layers of Convolutional neural networks.**	**Understand**	**6**
C)	**What are the advantages of Convolutional neural networks over multilayer perceptron.**	**Analyze**	**6**

Q. 5	Solve Any Two of the following.		12
A)	State some application of Deep learning.	Understand	6
B)	What is the need of normalization. Explain batch normalization.	Remember	6
C)	Explain the working of recurrent neural network.	Remember	6
	*** End ***		

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	DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE		
	Regular & Supplementary Winter Examination-2023		
	Course: B. Tech. **Branch :CSE/CE** **Semester :VII**		
	Subject Code & Name: Design Thinking (BTCOE705C)		
	Max Marks: 60 **Date:11-01-24** **Duration: 3 Hr.**		
	Instructions to the Students: 1. *All the questions are compulsory.* 2. *The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.* 3. *Assume suitable data wherever necessary and mention it clearly.*		
		(Level/CO)	**Marks**
Q. 1	**Solve Any Two of the following.**		**12**
A)	Explain the different phases of design thinking process?	Remember	**6**
B)	Explain of Human-Centered Design (HCD) process?	Analysis	**6**
C)	Elaborate two models of design thinking?	Understand	**6**
Q.2	**Solve Any Two of the following.**		**12**
A)	Discuss the role of Empathy in Design Thinking?	Apply	**6**
B)	Explain the concept of Customer Journey mapping.	Understand	**6**
C)	Discuss the creation of user personas?	Remember	**6**
Q. 3	**Solve Any Two of the following.**		**12**
A)	Explain of Inventive principles and their applications.	Remember	**6**
B)	What is root cause analysis? What are its goals and benefits?	Understand	**6**
C)	What is TRIZ? Explain the use of TRIZ methods in industry	Analysis	**6**
Q.4	**Solve Any Two of the following.**		**12**
A)	Explain prototyping and its advantages in design thinking.	Remember	**6**
B)	What is Market Validation? Explain the steps to determine market validation.	Understand	**6**
C)	Explain the Best practices of presentation. Preparing for your Market Research Presentation.	Understand	**6**
Q. 5	**Solve Any Two of the following.**		**12**
A)	What are the benefits of iteration in the design thinking process?	Understand	**6**
B)	Discuss about the techniques for taking the Idea to the market.	Remember	**6**
C)	Explain how innovation management is done in a company.	Understand	**6**
	*** End ***		

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Course: B. Tech.　　　Branch : Comp Engg /Comp Sci & Engg　　　Semester : VII

Subject Code & Name:　BTCOE703C_**Y20** Natural Language Processing

Max Marks: 60　　　　　　　Date:06-01-24　　　　Duration: 3　Hr.

Instructions to the Students:
1. *All the questions are compulsory.*
2. *The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.*
3. *Use of non-programmable scientific calculators is allowed.*
4. *Assume suitable data wherever necessary and mention it clearly.*

		(Level/CO)	Marks
Q. 1	**Solve Any Two of the following.**		**12**
A)	**Explain ArgMax() based computation in NLP. Illustrate using 1) Single class. 2)Multiclass on classification**	**Apply**	**6**
B)	**What is speech processing in NLP? How does it work? Give different applications of speech processing.**	**Understand**	**6**
C)	**Explain in brief Places of Articulation**	**Understand**	**6**
Q.2	**Solve Any Two of the following.**		**12**
A)	**What do you mean by morpheme? Explain different morphemes, with examples.**	**Understand**	**6**
B)	**Illustrate maximum entropy principle formula with example.**	**Understand**	**6**
C)	**Explain the Finite State Machine Based Morphology Design a finite state transducer with E-insertion orthographic rule that parses from surface level "foxes" to lexical level "fox+N+PL" using FST.**	**Apply**	**6**
Q. 3	**Solve Any Two of the following.**		**12**
A)	**Perform parsing using simple top down parsing for the sentence "The dogs cried" using the grammar given below:** **S->NP VP** **NP->ART N** **NP->ART ADJ N** **VP->V** **VP->V NP**	**Apply**	**6**
B)	**Explain the Statistical Parsing. Describe usage of Probabilistic Context Free Grammar (PCFG) in NLP**	**Understand**	**6**
C)	**What is parsing? Explain chunking**	**Understand**	**6**

Q.4	Solve Any Two of the following.		12
A)	Explain the semantic roles Labeling used in the semantic analysis with grammatical Cases.	Understand	6
	What are the thematic roles associated with the sentence		
	• John broke the window with the hammer		
B)	What is Word Sense Disambiguation? Illustrate with example how Dictionary-based approach identifies correct sense of an ambiguous word.	Understand	6
C)	Explain the Selectional Restrictions. Analyze with example how Selectional Restrictions can use to solve following NLP problem	Analyze	6
	a. semantic role assignments		
	b. Syntactic Ambiguity		
	c. Word Sense Disambiguation		

Q. 5	Solve Any Two of the following.		12
A)	What is textual entailment in NLP? Apply it on question answering application and simplify its working with suitable example.	Apply	6
B)	Explain the process and importance of sentiment analysis.	Understand	6
C)	Explain the architecture of an Information Retrieval system with a neat diagram.	Understand	6

*** End ***

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Regular End Semester Examination – Summer 2022

Course: B. Tech.   Branch :   Computer Science & Engineering   Semester : VI

Subject Code & Name: Artificial Intelligence BTCOE603 (B)

Max Marks: 60   Date:20/08/2022   Duration: 3.45 Hr.

Instructions to the Students:
  1. All Questions are Compulsory.
  2. Draw neat diagram wherever necessary.
  3. Figures to right indicates full marks
  4. Assume suitable data wherever necessary and mention it clearly

		(Level/CO)	Marks
Q. 1	**Solve Any Two of the following.**		
A)	What is AI? Explain the goal of AI.	(Synthesis)	**05**
B)	Explain the advantage and disadvantage of AI.	(Remember)	**05**
C)	List the type of Agent and explain any one.	(Understand)	**05**
Q.2	**Solve Any Two of the following.**		
A)	Explain steps to solve problem Using AI.	(Understand)	**05**
B)	Explain A* Graph Search with example.	(Remember)	**05**
C)	Explain Depth First Search.	(Understand)	**05**
Q. 3	**Solve Any Two of the following.**		
A)	What is Constraints Satisfaction Problem explain with example.	(Synthesis)	**05**
B)	List the different types of local consistency and explain any one.	(Remember)	**05**
C)	Write a short note on Intelligent backtracking?	(Remember)	**05**
Q.4	**Solve Any Two of the following.**		
A)	Explain Game tree with example of Tic-Tac-Toe game.	(Remember)	**05**
B)	Write a short not on Non-deterministic games?	(Understand)	**05**
C)	Write a pseudo-code for Alpha-Beta Pruning.	(Understand)	**05**
Q. 5	**Solve Any Two of the following.**		
A)	Explain Knowledge-Based Agents in AI.	(Synthesis)	**05**
B)	Explain The Wumpus World in AI with its Properties.	(Remember)	**05**
C)	What is Propositional Logic explain with example.	(Remember)	**05**
Q. 6	**Solve Any Two of the following.**		
A)	Explain Approximate Inference in Bayesian Networks in AI.	(Synthesis)	**05**
B)	What is Quantifying Uncertainty and explain it use in AI.	(Remember)	**05**
C)	Explain Representing Knowledge in an Uncertain Domain.	(Understand)	**05**

*** End ***

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Supplementary Semester Examination – Summer 2022

Course: B. Tech.   Branch : Computer   Semester : VIII

Subject Code & Name: BTCOE702A Big Data Analytics

Max Marks: 60   Date: 18/08/2022   Duration: 3.45 Hrs.

Instructions to the Students:
1. *All the questions are compulsory.*
2. *The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.*
3. *Use of non-programmable scientific calculators is allowed.*
4. *Assume suitable data wherever necessary and mention it clearly.*

		(Level/CO)	Marks
Q. 1	**Solve Any Two of the following.**		
A)	What is Big Data? Explain characteristics of Big Data.	Remember	4
B)	Describe the various applications of Big Data Analytics.	Understand	4
C)	Explain about the challenges facing in processing big data now days?	Understand	4
Q.2	**Solve Any Two of the following.**		
A)	Explain MapReduce framework in brief.	Remember	4
B)	Define HDFS. Explain HDFS Architecture.	Understand	4
C)	Write down YARN component for Big Data Platforms.	Remember	4
Q. 3	**Solve Any Two of the following.**		
A)	How to process Big Streaming Data?	Understand	4
B)	Explain the entire computation of Spark Streaming.	Remember	4
C)	Define Apache Spark and Apache kafka. Write down the benefits of kafka.	Understand	4
Q.4	**Solve Any Two of the following.**		
A)	List out Spark MLlib Library.	Remember	4
B)	Write down categories of Machine Learning. Explain any one from it.	Remember	4
C)	Describe the components of Spark MLlib.	Understand	4
Q. 5	**Solve Any Two of the following.**		
A)	How does the mongo DB aggregationpipeline work?	Remember	4
B)	What is Mongo DB? Explain in brief key features of Mongo DB.	Understand	4
C)	Write difference between MongoDB and Hadoop.	Analysis	4

*** End ***

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Supplementary Semester Examination – Summer 2022

Course: B. Tech. Branch: Computer Engineering Semester: VII

Subject Code & Name: BTCOE702(B) Distributed System

Max Marks: 60 Date: 18/08/2022 Duration: 3.45 Hr.

Instructions to the Students:
1. All the questions are compulsory.
2. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.
3. Use of non-programmable scientific calculators is allowed.
4. Assume suitable data wherever necessary and mention it clearly.

		(Level/CO)	Marks
Q. 1	**Solve Any Two of the following.**		
A)	What is Distributed System? Explain types of distributer Systems.	Remember	06
B)	Explain distributed Computing Environment.	Remember	06
C)	Elaborate Issues in IPC by Message-Passing and Synchronization.	Apply	06
Q.2	**Solve Any Two of the following.**		
A)	How transparency is achieved in RPC?	Evaluate	06
B)	Explain some Communication RPC.	Apply	06
C)	Explain RPC in Heterogeneous Environments.	Analyze	06
Q. 3	**Solve Any Two of the following.**		
A)	Explain the Architecture of Distributed Shared Memory.	Evaluate	12
B)	Explain the clock synchronization algorithms.	Analyze	12
C)	Explain Distributed Approach for providing Mutual Exclusion.	Apply	12
Q.4	**Solve Any Two of the following.**		
A)	Explain Desirable Features of a Good Global Scheduling Algorithm.	Analyze	06
B)	Explain the Load balancing approach in distributed system.	Apply	06
C)	Explain Threads in Distributed System.	Apply	06
Q. 5	**Solve Any Two of the following.**		
A)	Explain File Accessing Models in Distributed System.	Remember	12
B)	Explain Fault Tolerance in Distributed File System.	Evaluate	12
C)	Explain File Models in Distributed System.	Analyze	12

*** End ***

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Supplementary End Semester Examination – Summer 2022

Course: B. Tech.   **Branch : Computer Engineering**   **Semester : VII**

Subject Code & Name: Fundamental of Digital Image Processing (BTCOE702C)

Max Marks: 60   **Date:18/08/2022**   **Duration: 3.45 Hr.**

Instructions to the Students:
1. *All the questions are compulsory.*
2. *The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.*
3. *Use of non-programmable scientific calculators is allowed.*
4. *Assume suitable data wherever necessary and mention it clearly.*

		(Level/CO)	Marks
Q. 1	**Solve Any Two of the following.**		
A)	Define Image and describe the elements that helps to compose an image? What are the different types of images?	Understand	[6]
B)	Explain the fundamental steps performed in Digital Image Processing with suitable examples. Also, Explain in detail the concept of sampling and quantization.	Understand	[6]
C)	How pixels are related? Explain various types of correlation between pixels. Explain the pixel connectivity.	Understand	[6]
Q.2	**Solve Any Two of the following.**		
A)	What is image enhancement? Enlist and explain are the frequency domain techniques for image enhancement.	Understand	[6]
B)	What is image contrast? Explain in brief point processing technique.	Understand	[6]
C)	What is image smoothing? Identify various techniques used for image smoothness.	Apply	[6]
Q. 3	**Solve the following questions.**		
A)	What is image compression? Explain types of redundancies present in the image.	Understand	[6]
B)	Explain in details basic steps in image compression? Enlist the need of image compression?	Understand	[6]
Q.4	**Solve Any Two of the following.**		
A)	What is image segmentation? Describe the following Image Segmentation Technique. (a) Threshold Based Segmentation (b) Edge Based Segmentation	Understand	[6]

B) Explain the following image segmentation techniques.
    (a) Region-Based Segmentation   Understand   [6]
    (b) Clustering Based Segmentation

C) How to detect discontinuity in the image? Which are the types of   Remember   [6]
discontinuities in the image?

Q. 5   Solve Any One of the following.

A) Identify and describe in details any six applications of image processing in
satellite.   Apply   [12]

B) Explain Medical Image processing in detail.   Understand   [12]

*** End ***