AR20

CODE: 20AIT404   SET-1

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech I Semester Regular Examinations, October -2023
Deep Learning
(COMPUTER SCIENCE AND ENGINEERING)

Time: 3 Hours   Max Marks: 60

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

			Marks	CO	Blooms Level
UNIT-I					
1.	a)	Draw the block diagram of an artificial neuron.	3	1	2
	b)	Write short notes on feed forward neural networks.	7	1	2
		(OR)			
2.	a)	Define linear neuron and neural networks with its applications.	3	1	2
	b)	How to build intelligent machines? Briefly explain with suitable example.	7	1	1
UNIT-II					
3.	a)	What is deep learning? Explain its uses and history.	5	2	2
	b)	Differentiate between machine learning and deep learning.	5	2	2
		(OR)			
4.		Briefly explain deep learning applications with relevant example.	10	2	2
UNIT-III					
5.		Draw and explain the architecture of convolutional neural network.	10	3	2
		(OR)			
6.	a)	Write short notes on the importance of CNN for image Segmentation and detection with relevant examples.	5	3	2
	b)	Briefly explain about Convolution, Correlation, Filtering with relevant examples.	5	3	2
UNIT-IV					
7.	a)	Explain the working of Gated Recurrent Unit.	7	4	2
	b)	Write short note on Generative Adversarial Networks.	3	4	2
		(OR)			
8.	a)	Explain the structure of LSTM with its applications.	7	4	2
	b)	Write short note on RNN.	3	4	2
UNIT-V					
9.		Briefly explain the variants of CNN with relevant examples.	10	5	2
		(OR)			
10.		What is transfer learning? How transfer learning works? Explain steps to use transfer learning	10	5	2
UNIT-VI					
11.		Explain about computer vision an its application in detail.	10	6	2
		(OR)			
12.		Explain the applications of Deep Leaning through Automatic image captioning.	10	6	2

CODE: 20DSI404   **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech I Semester Regular Examinations, October -2023
Time series analysis and Forecasting
(INFORMATION TECHNOLOGY)

Time: 3 Hours   **Max Marks: 60**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

			Marks	CO	Blooms Level
		UNIT-I			
1.	a)	Define autocorrelation and partial autocorrelation. How are they relevant in time series analysis?	5	1	K-1
	b)	Explain the concept of trend and seasonality in time series data. How do they affect forecasting?	5	1	K-2
		(OR)			
2.	a)	Can you list the different types of time series models.	5	1	K-1
	b)	Explain the importance to understand the internal structure of time series data before applying forecasting models?	5	1	K-2
		UNIT-II			
3.	a)	Describe the process of smoothing data and its impact on time series visualization.	5	2	K-2
	b)	Can you explain the purpose of time series plots in data analysis?	5	2	K-2
		(OR)			
4.		Implement a smoothing technique, such as moving averages, to visualize a noisy time series dataset.	10	2	K-3
		UNIT-III			
5.		Conduct a hypothesis test to determine the significance of a regression coefficient in a real-world dataset.	10	3	K-3
		(OR)			
6.	a)	Describe the criteria for selecting variables in regression analysis.	5	3	K-2
	b)	Differentiate between generalized least squares and weighted least squares in terms of their applications.	5	3	K-2
		UNIT-IV			
7.	a)	Analyze the differences between autoregressive and moving average components in ARMA models.	5	4	K-4
	b)	Explain the effectiveness of differencing orders in converting non-stationary data into a stationary form.	5	4	K-2
		(OR)			
8.		Assess the impact of non-stationarity on the accuracy of ARIMA forecasts.	10	4	K-3
		UNIT-V			
9.	a)	Provide an overview of the impulse response function and its significance.	5	5	K-2
	b)	Describe the basic concept of the impulse response function and its applications	5	5	K-2
		(OR)			
10.	a)	Evaluate the strengths and weaknesses of various model selection criteria in different forecasting scenarios.	5	5	K-3
	b)	Compare and contrast the impulse response functions for competing Seasonal ARIMA models.	5	5	K-3
		UNIT-VI			
11.		Determine whether a multivariate time series process meets the criteria for stationarity.	10	6	K-3
		(OR)			
12.	a)	Explain how Vector ARIMA (VARIMA) models capture relationships between multiple time series.	5	6	K-3
	b)	Define univariate time series data and multivariate time series forecasting and explain about VAR model.	5	6	K-3

CODE: 20EVI404   **SET-1**
ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech I Semester Regular Examinations, October-2023
ELECTRIC VEHICLE ENGINEERING
(ELECTRICAL AND ELECTRONICS ENGINEERING)

Time: 3 Hours   **Max Marks: 60**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

			Marks	CO	Blooms Level
		UNIT-I			
1.		Discuss and compare different components of electric vehicle with conventional IC engine	10	CO1	2
		(OR)			
2.	a)	Discuss the inception of electric vehicle	5	CO1	2
	b)	Discuss the challenges of electric vehicle	5	CO1	2
		UNIT-II			
3.		Discuss various types of hybrid vehicles with neat diagrams	10	CO2	2
		(OR)			
4.	a)	Differentiate between micro-hybrid and mild hybrid vehicles	5	CO2	2
	b)	Explain the operating principle of Plug-in Hybrid vehicles	5	CO2	2
		UNIT-III			
5.	a)	Explain the topologies of different electric drive train.	5	CO3	2
	b)	Explain fuel efficiency analysis	5	CO3	2
		(OR)			
6.		Explain in detail power flow control in electric drive train topologies	10	CO3	2
		UNIT-IV			
7.	a)	Explain different types of battery technologies	5	CO4	2
	b)	Explain about Fuel Cell	5	CO4	2
		(OR)			
8.	a)	Explain the energy management system	5	CO4	2
	b)	Explain about Super Capacitor	5	CO4	2
		UNIT-V			
9.		Discuss about converter configurations for hybrid energy systems based on battery and ultra-capacitors.	10	CO5	2
		(OR)			
10.	a)	Explain about parallel connected converters	5	CO5	2
	b)	Explain about switched capacitor converter	5	CO5	2
		UNIT-VI			
11.		Discuss the converter topologies for charging of an electric vehicle in brief	10	CO6	2
		(OR)			
12.	a)	Differentiate between AC and DC charging systems	5	CO6	2
	b)	Discuss about Wireless chargers	5	CO6	2

CODE: 20IOT404   **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech I Semester Regular Examinations, October-2023
IoT Securityand Trust
(ELECTRONICS AND COMMUNICATION ENGINEERING)

Time: 3 Hours   Max Marks: 60

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

			Marks	CO	Blooms Level
		UNIT-I			
1.	a)	Illustrate symmetric key cryptography. How does it differ from asymmetric key cryptography?	5	CO1	3
	b)	Explain the working principle of the Playfair cipher with an example.	5	CO1	2
		(OR)			
2.	a)	Briefly describe the Triple DES (3DES) encryption and its advantages over standard DES	5	CO1	2
	b)	Explain the concept of public-key cryptography. How does it solve the key distribution problem?	5	CO1	2
		UNIT-II			
3.	a)	Explain the role of authentication and authorization in IoT security. Provide examples of authentication methods used in IoT devices.	5	CO2	2
	b)	Explain the key components of a typical IoT security framework.	5	CO2	2
		(OR)			
4.	a)	Why is edge security essential in the context of IoT devices and applications?	5	CO2	3
	b)	Compare and contrast the security challenges in Internet, Intranet, LAN, and wireless networks.	5	CO2	3
		UNIT-III			
5.	a)	Discuss the challenges posed by the large-scale deployment of IoT devices in industries.	5	CO3	2
	b)	Discuss at least three common vulnerabilities and their potential impacts.	5	CO3	2
		(OR)			
6.	a)	Describe the roles of identity management, encryption, and access control in ensuring IoT security.	5	CO3	2
	b)	What is threat modeling in the context of cybersecurity	5	CO3	2
		UNIT-IV			
7.	a)	Explain the role of identity management in ensuring security within digital systems.	5	CO4	2
	b)	Discuss the differences between centralized, decentralized, and federated identity management models.	5	CO4	3
		(OR)			
8.	a)	What are the unique challenges associated with identity management in IoT	5	CO4	2
	b)	Define an identity management framework	5	CO4	2

UNIT-V

9.	a)	Discuss the role of trust metrics in the Trust Management Lifecycle	5	CO5	3
	b)	Discuss the importance of user authentication methods in ensuring identity and trust in online transactions.	5	CO5	3

(OR)

10.	a)	What are the key steps involved in mutual authentication and key exchange?	5	CO5	2
	b)	Discuss real-world applications of Web of Trust models in secure communication	5	CO5	3

UNIT-VI

11.	a)	What are the major categories of cyber crimes	5	CO6	2
	b)	Define the different types of hackers (white-hat, black-hat, grey-hat) and their motivations	5	CO6	2

(OR)

12.	a)	Discuss strategies such as cybersecurity training, regular software updates, and secure password practices.	5	CO6	3
	b)	How do cyber laws balance individual privacy rights with the need for enhanced cybersecurity measures?	5	CO6	4

CODE: 20ROT404   **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech I Semester Regular Examinations, October-2023
ROBOT VISION AND IMAGE PROCESSING
(MECHANICAL ENGINEERING)

Time: 3 Hours   **Max Marks: 60**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

	UNIT-I	Marks	CO	Blooms Level
1.	Explain about low level and high-level vision system with suitable illustrations	10	CO1	Understanding
	(OR)			
2.	Explain the basic components of vision system with a neat sketch	10	CO1	Understanding
	UNIT-II			
3.	Discuss in brief about the Deep Neural Networks.	10	CO2	Analysing
	(OR)			
4.	Write short notes on the following: a) Advanced Computer vision b) conventional neural network	10	CO2	Understanding
	UNIT-III			
5.	Write short notes on the following: a) Image transformation b) Image Filtering	10	CO3	Understanding
	(OR)			
6.	Describe about multiple view geometry and Discuss its Importance	10	CO3	Analysing
	UNIT-IV			
7.	Discuss about suitable materials used for design of robot	10	CO4	Applying
	(OR)			
8.	Discuss about Social Effects of Design in Robot Vision and Image Processing.	10	CO4	Applying
	UNIT-V			
9.	Discuss model system with uncertainty	10	CO5	Understanding
	(OR)			
10.	What is Function Approximation? Give its benefits and limitations	10	CO5	Understanding
	UNIT-VI			
11.	What is Robot Vision? Discuss its role in Industrial Automatic Assembly.	10	CO6	Understanding
	(OR)			
12.	Discuss role of Robot Vision for object detecting and obstacle avoidance	10	CO6	Understanding

AR20

CODE: 20SCT404   SET-1

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech I Semester Regular Examinations, October-2023
ESSENTIAL COMPONENTS OF SMART CITIES
(CIVIL ENGINEERING)

Time: 3 Hours   Max Marks: 60

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

			Marks	CO	Blooms Level
UNIT-I					
1.	a)	Explain in detail the attributes of smart buildings	5	CO1	2
	b)	Explain in detail the Heating – ventilation and air conditioning (HVAC) systems for a smart building	5	CO1	2
		(OR)			
2.	a)	Explain in detail about the systems form communication	5	CO1	2
	b)	Explain in detail the barriers and challenges in designing and implementing smart cities	5	CO1	2
UNIT-II					
3.	a)	Explain the functions of smart water management system?	5	CO2	2
	b)	Explain IOT based systems for waste collection and management?	5	CO2	2
		(OR)			
4.	a)	Explain in detail about Auto meted waste collection system (AWCS)?	5	CO2	2
	b)	Explain the challenges in designing and implementing smart water systems for a city?	5	CO2	2
UNIT-III					
5.	a)	Explain the concept of smart economy?	5	CO3	2
	b)	Explain in detail the entrepreneurship from smart economy point of view?	5	CO3	2
		(OR)			
6.	a)	Explain the need for skill development from a Smart Cities point of view?	5	CO3	2
	b)	Explain the role of academic institutions in Smart economy and governance?	5	CO3	2
UNIT-IV					
7.	a)	Explain the implementation stages in smart governance?	5	CO4	2
	b)	Explain the mechanisms to improve public service delivery?	5	CO4	2
		(OR)			
8.	a)	Explain the objectives of smart governance?	5	CO4	2
	b)	Explain the role of GIS based systems in smart governance?	5	CO4	2
UNIT-V					
9.	a)	Explain about climate change and its impact on biodiversity and ecosystem?	5	CO5	2
	b)	Explain the mitigation measures to manage urban noise?	5	CO5	2
		(OR)			
10.	a)	Explain the benefits of developing an ICT framework for environmental management?	5	CO5	2
	b)	Explain in detail about sustainable food production and consumption patterns for an smart environment point of view?	5	CO5	2
UNIT-VI					
11.	a)	Explain about access and application layers of ICT architecture?	5	CO6	2
	b)	Explain in detail about the storage technologies?	5	CO6	2
		(OR)			
12.	a)	Explain about IOT / M2M layer?	5	CO6	2
	b)	Explain in detail about the information security technologies?	5	CO6	2

AR16(RA)

CODE: 16OE4051   **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech I Semester Regular(RA)/Supplementary Examinations, October,2019
PROJECT MANAGEMENT
(OPEN ELECTIVE)

Time: 3 Hours   **Max Marks: 70**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1.	a)	Define Project Management. Explain the various stages in Project Management life cycle in detail.	7 M
	b)	Explain the Important Facets of Project Analysis.	7M
		(OR)	
2.	a)	Define Strategy. Explain the concepts of formulation of strategies with examples.	7 M
	b)	Define Capital Budgeting. Explain the different phases of Capital Budgeting.	7M

UNIT-II

3.		What is market and demand analysis? Explain demand analysis techniques?	14 M
		(OR)	
4.	a)	Define Demand Forecasting. Explain the different techniques of Demand Forecasting in detail.	7 M
	b)	Elaborate the concepts of Choice of Technology and Technical Arrangements in Technical Analysis.	7M

UNIT-III

7.	a)	Define Capital Structure. Explain the key factors in determining the Debt-Equity Ratio.	7 M
	b)	Define Working Capital. Explain the different types and processing of Working Capital.	7M
		(OR)	
6.	a)	Define Equity Capital. Explain the rights, advantages and disadvantages of Equity Capital.	7 M
	b)	Define Preference share Capital. Explain the different types of Preference Shares, its advantages and its disadvantages.	7M

UNIT-IV

7.	a)	Elaborately describe the different Forms of Project organisation	7 M
	b)	Discuss the Human Aspects of project Management.	7M
		(OR)	
8.	a)	Describe the Pre requisites for successful project implementation.	7 M
	b)	Explain the process of Project Monitoring and Controlling.	7M

UNIT-V

9.	a)	Elaborate the process of Completion of project and Managing Transition Period.	7 M
	b)	Describe the concept of Closure of Contracts and Completion of Assets of Projects.	7M
		(OR)	
10.	a)	Explain the steps in Post Project Evaluation and Completion Audit Report	7 M
	b)	Elaborate the Concept of Scientific Management designed by F.W. Taylor.	7M

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AR16

CODE: 16OE4055   **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech I Semester Supplementary Examinations, October, 2023

Basics of Mobile Communications
(OPEN ELECTIVE)

Time: 3 Hours   **Max Marks: 70**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1.	Explain the limitations of conventional mobile telephone system	14 M
	(OR)	
2.	Describe the three categories that specifies the performance criteria of a cellular system	14 M

UNIT-II

3.		Explain the point to point propagation model(Lee model)	14 M
		(OR)	
4.	a)	Explain different signal propagation models	7 M
	b)	Write the details of signal loss in foliage environment	7 M

UNIT-III

5.	a)	Define handoff and explain different types of handoff	7 M
	b)	Explain about dropped call rate	7 M
		(OR)	
6.		Write the details of various mobile antennas	14 M

UNIT-IV

7.		Write different channel assignment techniques	14 M
		(OR)	
8.	a)	Explain different types of setup channels	7 M
	b)	Write the differences between frequency management and channel assignment	7 M

UNIT-V

9.		Explain architecture of GSM network	14 M
		(OR)	
10.	a)	Explain the services offered by GSM	7 M
	b)	Write about TDMA	7 M

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AR16

CODE: 16OE4058   **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech I Semester Supplementary Examinations, October,2023
Entrepreneurial Development
(OPEN ELECTIVE)

Time: 3 Hours   **Max Marks: 70**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1.	a)	Explain the Nature and Scope of Business.	7M
	b)	Analyse the Concept of Entrepreneur & Entrepreneurship.	7M

(OR)

2.	a)	Explain the characteristics of an Entrepreneur.	7M
	b)	Classify the types of Entrepreneurs.	7M

UNIT-II

3.	a)	Elaborate the Environmental factors effecting entrepreneurship.	7M
	b)	Examine the factors affecting the local mobility of Entrepreneurs.	7M

(OR)

4.	a)	Explain the Concept of women entrepreneurship.	7M
	b)	Show the problems and remedies of women Entrepreneurship.	7M

UNIT-III

7.	a)	Elaborate the Steps to start an MSME.	7M
	b)	Explain the concept of Project Identification and e**laborate the ways of** Sources of new Ideas.	7M

(OR)

6.	a)	Explain the creative problem solving techniques in entrepreneurship.	7M
	b)	Explain the concepts of opportunity recognition.	7M

UNIT-IV

7.	a)	Explain MSME Development Act-2006.	7M
	b)	Elaborate the role of Business Incubation Centre,	7M

(OR)

8.	a)	Explain the role of National Skill Development Corporation in Entrepreneurial Development.	7M
	b)	Elaborate the role of Institutional finance in Entrepreneurial Development.	7M

UNIT-V

9.	a)	Outline the Types of Ownership in Business Enterprise.	7M
	b)	Elaborate the Concepts of working capital management.	7M

(OR)

10.	a)	Explain the concepts of Marketing management in brief.	7M
	b)	Explain the concepts of Human Resource management in brief.	7M

AR18

CODE: 18IET44A   **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech I Semester Supplementary Examinations, October,2023
INTRODUCTION TO DBMS

Time: 3 Hours   **Max Marks: 60**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1.	a)	Explain about ER model with example.	6M
	b)	Write Database System Applications	6M

(OR)

2.	a)	Compare and contrast Database Systems versus file Systems	6M
	b)	Describe DML commands with example.	6M

UNIT-II

3.	a)	What is an attribute? Explain different types of attributes in database.	6M
	b)	Describe integrity constraints over relations.	6M

(OR)

4.	a)	Explain Conceptual Design with the ER Model.	8M
	b)	Define entity. Give different entity types.	4M

UNIT-III

5.	a)	Explain Nested Queries with example.	6M
	b)	Describe comparison using NULL values and dis allowing NULL values in tables. Give example.	6M

(OR)

6.	a)	Explain Aggregative Operators with example.	6M
	b)	Explain Inner and Outer joins on the relations with example.	6M

UNIT-IV

7.	a)	What is Redundancy? Discuss problems caused by Redundancy.	6M
	b)	Discuss the need of decomposing a relation. Also explain the types of decomposition.	6M

(OR)

8.		Discuss in detail about Normal forms with suitable examples.	12M

UNIT-V

9.	a)	Describe ACID properties of a transaction.	6M
	b)	Explain Hash based indexing with example.	6M

(OR)

10.	a)	Discuss Transaction Serializability in detail.	6M
	b)	Explain cluster-based indexing with example.	6M

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CODE: 18IET441   SET-1
ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech I Semester Regular(RA)/Supplementary Examinations, October,2023
PROJECT MANAGEMENT
(INTERDESCIPLAINERY ELECTIVE)

Time: 3 Hours   **Max Marks: 60**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1. Define Project Management? Explain about the tools for identifying   12M
   investment opportunities.

(OR)

2. Define project planning? Explain its stages? When is a project   12M
   considered to be successful?

UNIT-II

3. What is market and demand analysis? Explain demand analysis   12M
   techniques?

(OR)

4. Describe the UNIDO and SCBA approaches?   12M

UNIT-III

5. Discuss the role of financial resources in implementation and control of   12M
   projects?

(OR)

6. What is meant by contract? Explain its types and elements   12M

UNIT-IV

7. Discuss in detail the monitoring system. Discuss steps for project   12M
   monitoring and control in project management.

(OR)

8. Give detailed overview of PERT and CPM models with a suitable   12M
   example. Discuss their merits and demerits over each other

UNIT-V

9. What is recruitment? Explain its sources?   12M

(OR)

10 Define training? Describe its types with advantages and disadvantages.   12M
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AR18 (RA)

CODE: 18IET443   **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech I Semester Regular(RA)/Supplementary Examinations, October 2023
ENTREPRENEURIAL DEVELOPMENT

Time: 3 Hours   **Max Marks: 60**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1. . Define Entrepreneur? Explain the qualities of Entrepreneur.   12M
(OR)
2. Explain the role of Women Entrepreneurs in the today's competitive world.   12M

UNIT-II

3. Explain the nature and development of entrepreneurship in India.   12M

(OR)
4. Explain the institutions supporting for Entrepreneurship development programmes. 12M

UNIT-III

5. Explain the advantages to be gained from a well-balanced Project Plan.   12M
(OR)
6. Briefly write about report writing? Explain the contents of a Project report 12M

UNIT-IV

7. Explain the different sources of long term and short term capital.   12M

(OR)
8. Describe the role of Industrial Development Bank of India (IDBI) to extend   12M
support to entrepreneurs.

UNIT-V

9. List the factors affecting working capital of an MSME.   12M
(OR)
10. Explain the problems and prospects of MSMEs in India.   12M

1 of 1
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AR18 (RA)

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech I Semester Regular (RA)/Supplementary Examinations, October, 2023
GEOGRAPHICAL INFORMATION SYSTEMS

Time: 3 Hours   Max Marks: 60

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1. a) Discuss the following projection properties.   6M
   a) Mercator projection   b) Polyconic Projection
   b) Define the term map scale and illustrate various kinds of map scales in GIS?   6M
   (OR)
2. a) Discuss by neat sketch about the Conic & Azimuthal projections and their aspects   6M
   b) Summarize the salient features of Universal Transverse Mercator (UTM) Grid with advantages.   6M

UNIT-II

3. a) Explain briefly the spatial data inputs and it's procedure   6M
   b) Illustrate the GIS components with a neat sketch   6M
   (OR)
4. a) Discuss the procedure of spatial data joining with attribute data with figures   6M
   b) Explain the fundamental operations of GIS   6M

UNIT-III

5. a) Explain the following functions of DBMS   6M
   a) Synchronization   b) Physical data independence c) Efficiency
   b) Discuss simple list file structure in data file management   6M
   (OR)
6. a) Illustrate with a neat sketch about Hierarchical Database Model and its advantages and disadvantages.   6M
   b) Discuss network systems in DBMS.   6M

UNIT-IV

7. a) Explain about graphical representation of Raster data with a neat sketch   6M
   b) Discuss the following with a neat sketch   6M
   a) Connectivity b) Contiguity
   (OR)
8. a) Distinguish between Raster data & Vector data in GIS   6M
   b) Explain the following data compaction methods   6M
   a) Runlength Encoding and Quadtree with a neat sketch

UNIT-V

9. Explain the role of GIS in Agricultural Studies.   12 M
   (OR)
10. Discuss how GIS can be useful in Forest studies.   12 M

AR18

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
IV B.Tech I Semester Supplementary Examinations, October, 2023
FUNDAMENTALS OF ROBOTICS

Time: 3 Hours   **Max Marks: 60**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1.	a)	Classify automation? Explain them with examples.	6M
	b)	What are the different types of the end effectors of a robot and explain them?	6M

(OR)

2.	a)	Classify robot by coordinate system.	4M
	b)	Explain any two coordinate systems with neat sketch.	8M

UNIT-II

3.	a)	List the advantages and disadvantages of Pneumatic actuators.	6M
	b)	Discuss hydraulic actuators used for robots?	6M

(OR)

4.	a)	List out the sensors used in robots.	4M
	b)	Briefly explain the working principle of any two types of position sensors with neat sketch.	8M

UNIT-III

5.	a)	What are the properties of Transformation matrix?	4M
	b)	The coordinates of point P in frame{1} are $[3\ 2\ 1]^T$. The position vector P is rotated about x-axis by 60^0. Find the coordinates of Q, the new position of point P.	8M

(OR)

6.	a)	A point $P(7,3,2)^T$ is attached to frame{1} and subjected to rotation of 60^0 about z-axis followed by rotation of 90^0 about y-axis followed by translation of [4,-3,7]. Find the coordinates of point relative to the reference frame at the conclusion of transformations.	10M
	b)	What are the fundamental transformations?	2M

UNIT-IV

7.	a)	Write a short note on teach pendant method.	4M
	b)	Write a note on lead –through programming method and write down their advantages and disadvantages	8M

(OR)

8.	a)	What is robot offline programming method and write down advantages over online programming.	4M
	b)	Briefly explain offline programming method.	8M

UNIT-V

9.	a)	List out the applications of Robots in manufacturing.	4M
	b)	Discuss palletizing and depalletizing with neat sketch.	8M

(OR)

10.	a)	List out robot non-manufacturing applications	4M
	b)	Briefly explain robot applications in assembling and inspection with neat sketch.	8M

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CODE: 18IET447 SET-2

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IV B.Tech I Semester Supplementary Examinations, October, 2023
BASICS OF MOBILE CELLULAR COMMUNICATIONS

Time: 3 Hours Max Marks: 60

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1.	a)	Explain about Frequency Re use concept in mobile cellular communication	6 M
	b)	Explain about the co channel reduction factor	6 M

(OR)

2.	Explain the operation of a cellular system with neat diagram and also explain Performance criteria of mobile communication systems	12 M

UNIT-II

3.	Explain about the Foliage Loss in Mobile communication with suitable examples.	12 M

(OR)

4.	a)	Explain the different types of Fading in signal propagation	6 M
	b)	Explain signal reflections in flat and hilly terrain	6 M

UNIT-III

5.	Explain in detail about hand off initiations	12 M

(OR)

6.	Explain the concept of Dropped call rates and estimation.	12 M

UNIT-IV

7.	Describe the Channel assignments techniques in mobile communication,	12 M

(OR)

8.	Explain about Channel sharing and borrowing.	12 M

UNIT-V

9.	Explain the concept of CDMA technique	12 M

(OR)

10.	a)	What is GSM and explain	6 M
	b)	List out the advantages of 4G technologies	6 M