[B19CEOE01]

SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)

III B. Tech II Semester (R19) Regular Examinations

DISASTER MANAGEMENT

(Open Elective: offered by CE)

(offered to : CSE, ECE,EEE,IT & ME)

MODEL QUESTIONPAPER

TIME: 3Hrs. **Max. Marks: 75M**

Answer ONE Question from EACH UNIT

All questions carry equal marks

			CO	KL	M
		UNIT – I			
1.	a.	Explain Disaster management cycle and five priorities for action	1	K2	15
		OR			
2.	a.	Differentiate Natural and manmade disasters with suitable examples.	1	K2	15
		UNIT – II			
3.	a.	Explain in detail about the impact of disaster on economic growth of a nation.	1	K2	15
		OR			
4.	a.	Explain in detail about the impact of disasters on agricultural and live hood	1	K2	15
		UNIT – III			
5.	a.	Explain in detail about the structural and non-structural measures to be followed in risk reduction.	2	K2	15
		OR			
6.	a.	Explain in detail about the risk reduction strategies	2	K2	15
		UNIT – IV			
7.	a.	Explain the Guiding Principles for Disaster Risk Management.	3	K2	15
		OR			
8.	a.	Explain in detail about the community based disaster management and social capital.	3	K2	15
		UNIT – V			
9.	a.	Explain in detail about the role of technology in disaster preparedness and planning	3	K2	15
		OR			
10.	a.	Explain about the role of Indigenous Knowledge in Natural Resource Management.	3	K2	15

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[B19CEOE01]

SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)

III B. Tech II Semester (R19) Regular Examinations

REMOTE SENSING AND GEOGRAPHIC INFORMATION SYSTEMS

(Open Elective: offered by CE)

(Offered to: CSE, ECE, EEE, IT & ME)

MODEL QUESTIONPAPER

TIME: 3Hrs. **Max. Marks: 75M**

Answer ONE Question from EACH UNIT

All questions carry equal marks

	UNIT-I	M	CO	KL
1.a)	Define Remote Sensing. Illustrate the basic components of Remote Sensing.	**7**	1	K2
b)	Explain electromagnetic radiation interaction with atmosphere.	**8**	1	K2
	OR			
2. a)	What are the advantages and disadvantages of various Remote Sensing platforms.	**7**	1	K2
b)	What is Sensor? Write a note on classification of Sensors.	**8**	1	K2
	UNIT-II			
3.a)	Evaluate the elements of visual interpretation in image analysis.	**7**	2	K2
b)	Compare supervised and unsupervised classification.	**8**	2	K2
	OR			
4. a)	Evaluate the digital image processing techniques.	**7**	2	K2
b)	Explain in detail about the concept of resolution, discuss in brief about spatial and radiometric resolutions.	**8**	2	K2
	UNIT-III			
5.a)	Expand GIS. Describe the key components of GIS in detail with a neat sketch.	**7**	3	K2
b)	Distinguish the raster data models and vector data models.	**8**	3	K2
	OR			
6. a)	Explain the role of Map Projections in GIS.	**7**	3	K2
b)	Briefly explain the application areas of GIS.	**8**	3	K2
	UNIT-IV			
7. a)	Demonstrate the role of Remote Sensing in forest studies.	**7**	4	K2
b)	Explain the significance of Remote Sensing and GIS in Urban Planning.	**8**	4	K2
	OR			
8. a)	Explain the function of Remote Sensing in Geological studies.	**7**	4	K2
b)	Demonstrate the role of Remote Sensing in Land Use Land Cover studies.	**8**	4	K2
	UNIT-V			
9.a)	Explain the role of Remote Sensing for Watershed Management.	**7**	4	K2
b)	Illustrate the role of RS & GIS in Flood zoning and its mapping.	**8**	4	K2
	OR			
10. a)	Elucidate the role of GIS for Environmental Impact Assessment.	**7**	4	K2
b)	GIS for Ground Water prospects mapping - Explain.	**8**	4	K2

[B19CSOE01]

SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)

III B. Tech II Semester (R19) Regular Examinations

DATA STRUCTURES

(Open Elective: offered by CSE)

(Offered to: CE, ECE, EEE & ME)

MODEL QUESTIONPAPER

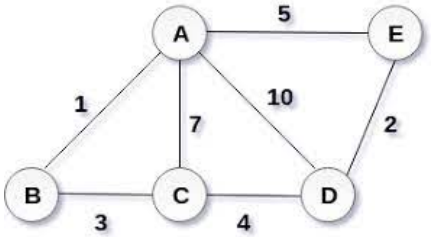
TIME: 3Hrs. **Max. Marks: 75M**

Answer ONE Question from EACH UNIT

All questions carry equal marks

*****

			CO	KL	M
		UNIT - I			
1.	a).	Distinguish between linear and binary search technique.	CO1	K4	7
	b).	Discuss the running time of Divide-and-Conquer Merge sort algorithm with example.	CO1	K2	8
		OR			
2.	a).	em with example? Write a recursive a algorithm	CO1	K4	7
	b).	Write an algorithm for Quick sort and also analyze the time complexity.	CO1	K2	8
		UNIT - II			
3.	a).	Explain about queue operations with example	CO2	K2	7
	b).	Explain representation of Queues using Linked List.	CO2	K2	8
		OR			
4.	a).	Define stack. Explain different operations performed on stack.	CO2	K2	7
	b).	Convert the prefix expression * + A B – C D into infix expression and then draw the corresponding expression tree.	CO2	K2	8
		UNIT - III			
5.	a).	What is meant by linked list and doubly linked lit? Write an algorithm to insert and delete elements in a doubly linked list.	CO3	K2	8
	b).	Explain Sparse Matrix Representation using Linked List.	CO3	K4	7
		OR			
6.	a).	Write procedure for Circular Linked list deletion operations	CO3	K2	7
	b).	Write an algorithm to demonstrate a polynomial using a linked list for Addition, Subtraction and Multiplication operations.	CO3	K3	8
		UNIT - IV			
7.	a).	Trace the construction of BST for the following data : 14,7,10,20,31,3,5,25,12.	CO4	K3	8
	b).	What are the various traversal methods available for traversing a binary tree?	CO4	K2	7
		OR			
8.	a).	The inorder and preorder sequence of nodes of a binary tree are CGADFBE and BCAGFDE respectively. Construct the binary tree and find its post order sequence of nodes.	CO4	K3	8
	b).	Explain a procedure to add node to a Binary tree and deleting a node from a Binary tree.	CO4	K4	7
		UNIT - V			
9.	a).	Illustrate Kruskal's algorithm to find the minimum spanning tree of a graph.	CO5	K3	8

					
	b).	Explain different ways representation of graphs.	CO5	K4	7
		OR			
10.	a).	Differentiate depth-first search and breadth-first search traversal of a graph with suitable examples.	CO5	K2	8
	b).	Illustrate Prim's algorithm to find the minimum spanning tree of a graph.	CO5	K3	7

[B19CSOE02]

SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)

III B. Tech II Semester (R19) Regular Examinations

JAVA PROGRAMMING

(Open Elective: offered by CSE)

(Offered to: CE, ECE, EEE & ME)

MODEL QUESTIONPAPER

TIME: 3Hrs. **Max. Marks: 75M**

Answer ONE Question from EACH UNIT

All questions carry equal marks

*****

			M	CO	KL
UNIT-I					
1	a.	Explain about the Features of Java.	7	1	2
	b.	Illustrate about Method Overloading with an example.	8	1	2
OR					
2	a.		8	1	2
	b.	Extend with an example about this keyword.	7	1	2
UNIT-II					
3	a.	Explain the differences between Arrays and Vectors.	7	2	2
	b.	Write a Java Program to implement methods of Vector class.	8	2	3
OR					
4	a.	Compare the differences between String class and StringBuffer class.	7	2	2
	b.	Develop a Java Program to implement various methods of String class.	8	2	3
UNIT-III					
5	a.	List different types of inheritances in Java.	8	3	1
	b.	Demonstrate with example about Method Overriding.	7	3	2
OR					
6	a.	Distinguish abstract class and interface.	7	3	4
	b.	Summarize about procedure for creating packages with an example.	8	3	2
UNIT-IV					
7	a.	Explain about the mechanism of Exception handling in Java.	7	4	2
	b.	Develop a Java Program to create Custom Exception.	8	4	3
OR					
8	a.	Explain about the life cycle of thread.	7	4	2
	b.	Explain about the various methods of creating Thread.	8	4	2

UNIT-V					
9	a.	Discuss about Byte Oriented IO and Character Oriented IO.	7	5	2
	b.	Develop a Java program to copy contents of one file to another file using Line Oriented IO.	8	5	3
OR					
10	a.	Discuss the types of JDBC Drivers.	8	5	2
	b.	Construct a JDBC program to retrieve data from the database.	7	5	3

[B19CSOE03]

SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)

III B. Tech II Semester (R19) Regular Examinations

WEB TECHNOLOGIES

(Open Elective: offered by CSE)

(Offered to: CE, ECE, EEE & ME)

MODEL QUESTIONPAPER

TIME: 3Hrs. **Max. Marks: 75M**

Answer ONE Question from EACH UNIT

All questions carry equal marks

*****

			CO	KL	M
UNIT - I					
1.	a).	Explain the concept of frameset and frames in building Web Pages	CO1	K2	7
	b).	Explain various form elements with an example	CO1	K2	8
OR					
2.	a).	Explain different types of lists in HTML with an example	CO1	K2	7
	b).	Write an HTML script to manage personal details of a student like name, class, qualifications, photo, address etc., using tables and other suitable tags.	CO1	K2	8
UNIT - II					
3.	a).	Explain various types of Style sheets with example	CO1	K2	7
	b).	Write a java script to print Armstrong Numbers between 1 to 500.	CO1	K2	8
OR					
4.	a).	Explain different java script objects.	CO2	K2	7
	b).	Explain various types of selectors in CSS with suitable examples	CO2	K2	8
UNIT - III					
5.	a).	Explain about Ajax Mechanism with an Example	CO3	K2	7
	b).	Explain the differences between DOM & SAX	CO3	K2	8
OR					
6.	a).	Explain about XML schema with an example	CO3	K2	8
	b).	Explain about integration of Ajax and PHP with an example	CO3	K2	7
UNIT - IV					
7.	a).	Explain about the types of Arrays in PHP with an example.	CO4	K2	7
	b).	Explain any 5 String Operations in PHP with Suitable Examples	CO4	K2	8
OR					
8.	a).	Explain various types of control statements in PHP	CO4	K2	8
	b).	Write a PHP Script to find the Fibonacci sequence upto a given number	CO4	K2	7
UNIT - V					
9.	a).	Explain how a Session is created and Destroyed in PHP	CO5	K2	7
	b).	Develop a PHP program to fetch data from the MYSQL database.	CO5	K3	8
OR					
10.	a).	Develop a PHP Program to Insert data into a MYSQL database	CO5	K3	8
	b).	Explain about Cookies in PHP with an example.	CO5	K2	7

[B19ECOE01]

SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)

III B. Tech II Semester (R19) Regular Examinations

BASIC ELECTRONICS

(Open Elective: offered by ECE)

(Offered to: CE, CSE, EEE , IT & ME)

MODEL QUESTIONPAPER

TIME: 3Hrs. **Max. Marks: 75M**

Answer ONE Question from EACH UNIT

All questions carry equal marks

*****

			CO	KL	M
		UNIT-I			
1.	**a).**	Explain basic operation and V-I characteristics of semiconductor diode?	**1**	K2	**7**
	b).	What is Zener diode? Explain its operation in reverse bias condition along with its applications?	**1**	K2	**8**
		OR			
2.	**a).**	Give a brief note on the breakdown mechanism of a diode.	**1**	K2	**7**
	b).	Explain construction and operation of LED?	**1**	K2	**8**
		UNIT-II			
3.	**a).**	Draw and explain the operation of a full wave rectifier.	**1**	K3	**8**
	b).	Prove that the rectifier efficiency of a full wave rectifier is twice that of the half wave rectifier.	1	K3	**7**
		OR			
4.	**a).**	Derive the expression for efficiency and ripple factor for a half wave rectifier with capacitive filter.	**1**	K3	**8**
	b).	Mention the advantages and applications of rectifier circuits.	**1**	K2	**7**
		UNIT-III			
5.	**a).**	Plot the input and output characteristics of transistor in CE configuration?	**2**	K2	**8**
	b).	Explain different modes of operation of a BJT.	**2**	K2	**7**
		OR			
6.	**a).**	Explain Common-base configuration of transistor?	**2**	K2	**8**
	b).	Explain the operation of transistor as an amplifier.	**2**	K2	**7**
		UNIT-IV			
7.	**a).**	Explain the operation of a BJT in self bias.	**3**	K2	**8**
	b).	Explain the working principle of CE amplifier with neat diagram.	**3**	K2	**7**
8.	**a).**	Write a short note on transistor hybrid model	**3**	K2	**7**
	b).	Explain the working principle of CC amplifier with neat sketch.	**3**	K2	**8**
		UNIT-V			
9.	**a).**	Explain the construction and working of a n-channel JFET.	**4**	K2	**7**
	b).	Write a short note on FET biasing.	**4**	K2	**8**
		OR			
10.	**a).**	List out the advantages of FET over BJT.	**4**	K2	**7**
	b).	Write a brief note on the characteristics of a Junction FET.	**4**	K2	**8**

[B19ECOE02]

SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)

III B. Tech II Semester (R19) Regular Examinations

SIGNALS & SYTEMS

(Open Elective: offered by ECE)

(Offered to: CE, CSE, EEE , IT & ME)

MODEL QUESTIONPAPER

TIME: 3Hrs. **Max. Marks: 75M**

Answer ONE Question from EACH UNIT

All questions carry equal marks

*****

			M	CO	KL
		UNIT-I			
1	a.	Explain all classification of signals with examples for each category.	**7**	**1**	**3**
	b.	Determine the power and RMS value of the following signals. 1. x (t) = 5cos (50t+3), 2. x (t) =10cos (5t)cos (10t)	**8**	**1**	**3**
		OR			
2	a.	Prove the energy of the power signal is infinite over infinite time.	**7**	**1**	**3**
	b.	Find weather the below signals are periodic or not, if periodic find periodicity also. 1.$(-1)^n$ 2. $Cos\ 3t\ u(t)$	**8**	**1**	**2**
		UNIT-II			
3	a.	Determine whether the following systems are time invariant or not. 1. y(t) = x(t^2) 2 .$y\ (n) = x(2n)$	**7**	**2**	**2**
	b.	Find the convolution of the following two discrete time sequences x(n) = {1, 2, 5, 4} and y(n) = {6, 2, 4, 3}.	**8**	**2**	**2**
		OR			
4	a.	Find the convolution of the following two signals. X(t) = u(t) and y(t) = $e^{-at}u(t)$.	**7**	**2**	**3**
	b.	Explain all classification of systems with examples for each category.	**8**	**2**	**3**
		UNIT-III			
5	a.	State and derive time shifting and time scaling Properties of Fourier Transform.	**7**	**3**	**3**
	b.	Find the Fourier transform of the following 1. $e^{at}u(-t)$ 2. $te^{-at}u(t)$	**8**	**3**	**3**
		OR			
6	a.	Find the inverse Fourier transform of X(jw) =1/(1+jw)^2	**7**	**3**	**3**
	b.	State and prove the differentiation in the frequency domain property of CTFT	**8**	**3**	**3**
		UNIT-IV			
7	a.	Find the Laplace Transform of $x(t) = te^{-at}u(t)$	**7**	**4**	**3**
	b.	State and prove any two properties of the Laplace Transform.	**8**	**4**	**3**

		OR			
8	a.	Compute the initial and final values for $x(s) = \frac{2s+5}{s(s+3)(s+4)^2}$	**7**	**4**	**3**
	b.	Find the inverse Laplace Transform of $X(S) = log\left(\frac{S+5}{S+6}\right)$	**8**	**4**	**3**
		UNIT-V			
9	a.	List out the properties of ROC of Z – Transform.	**7**	**5**	**3**
	b.	Find the Z – Transform of the signal $\left(\frac{1}{2}\right)^{(n-1)} u(n-1)$.	**8**	**5**	**3**
		OR			
10	a.	Find the inverse Z – Transform of $\frac{1-aZ^{-1}}{Z^{-1}-a}$ with ROC $\|Z\| > \left\|\frac{1}{a}\right\|$	**7**	**5**	**3**
	b.	State the Nyquist sampling theorem and discuss about under sampling, critical sampling and over sampling conditions.	**7**	**5**	**3**

[B19EEOE01]

SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)

III B. Tech II Semester (R19) Regular Examinations

INTRODUCTION TO ELECTRICAL SYSTEMS

(Open Elective: offered by EEE)

(Offered to: CE, CSE, ECE , IT & ME)

MODEL QUESTIONPAPER

TIME: 3Hrs. **Max. Marks: 75M**

Answer ONE Question from EACH UNIT

All questions carry equal marks

*****

			CO	KL	M
UNIT-I					
1	a.	What are non-renewable and renewable sources of energy? sketch the layout of hydel power plant	1	3	8
	b.	Define the Electrical quantities i) Voltage ii) Current iii) Power iv) Energy? write the relation between power and Energy	1	3	7
OR					
2	a.	Explain with neat sketch thermal power plant?	1	3	8
	b.	Explain principle of operation electrical generator and derive emf equation in single loop generator?	1	3	7
UNIT-II					
3	a.	Explain in brief about Transmission and Distribution system	2	3	8
	b.	Explain various components of substation with the help of schematic diagram	2	3	7
OR					
4	a.	What is the principle operation of single-phase transformer and mention main applications of transformers?	2	3	7
	b.	Explain in brief about Indian power grid	2	3	8
UNIT-III					
5	a.	Explain the principle of operation of 3 phase induction motor.	3	3	8
	b.	Explain the laws of Illumination.	3	3	7
OR					
6	a.	Derive the torque equation in dc motor and write down the application of dc motors	3	3	7
	b.	Explain the construction and principle of operation fluorescent lamp.	3	3	8
UNIT-IV					
7	a.	What is rectifier? Explain operation of single-phase diode rectifier with neat sketch?	4	3	7

	b.	Explain lead acid battery cell and Li ion battery cell operation and explain importance of Li ion battery	4	3	8
OR					
8	a.	Explain single phase bridge inverter operation and draw waveforms and write its distortion factor and THD	4	3	8
	b.	Define DoD, C-rate, capacity, SoC, Energy density, SoH of a battery? Compare these parameter values of Li ion batteries and lead battery	4	3	7
UNIT-V					
9	a.	Explain briefly about the methods of artificial respiration for the person affected by electrical shock?	5	3	8
		Explain the construction details and working principle of plate earthing with a neat sketch?	5	3	7
OR					
10	a.	Explain the construction details and operation of a miniature circuit breaker (MCB)?	5	3	7
	b.	Explain in detail about the different types of electrical hazards?	5	3	8

[B19EEOE02]

SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)

III B. Tech II Semester (R19) Regular Examinations

ELECTRICAL ESTIMATION AND COSTING

(Open Elective: offered by EEE)

(Offered to: CE, CSE, ECE , IT & ME)

MODEL QUESTIONPAPER

TIME: 3Hrs. **Max. Marks: 75M**

Answer ONE Question from EACH UNIT

All questions carry equal marks

*****

			M	CO	KL
UNIT-I					
1	a.	Discuss in detail about Electrical diagrams.	**7**	**1**	**3**
	b.	Discuss in detail about Methods of representation of wiring diagrams.	**8**	**1**	**3**
OR					
2	a.	Explain the concept of system of connection of electrical appliances and accessories.	**7**	**1**	**3**
	b.	With the help of schematic and wiring diagram explain a simple fan and light circuit.	**8**	**1**	**3**
UNIT-II					
3	a.	With the help of neat sketch, Explain about three phase four wire distributed system.	**7**	**2**	**4**
	b.	Discuss in detail about the guidelines for the installation of fittings	**8**	**2**	**4**
OR					
4	a.	Discuss about various protections of electrical systems.	**7**	**2**	**4**
	b.	Explain in detail about the location of switches and outlets.	**8**	**2**	**4**
UNIT-III					
5	a.	What are the factors to be considered for electrical installation of residential building? Explain.	**7**	**3**	**3**
	b.	Discuss in detail about the estimation of material for the electrical installation of commercial building.	**8**	**3**	**3**
OR					
6	a.	How electrical installation is done for commercial buildings? Explain.	**7**	**3**	**3**
	b.	Discuss in detail about the electrical installation of small industries.	**8**	**3**	**3**
UNIT-IV					
7	a.	Discuss in detail about various types of substations.	**7**	**4**	**3**
	b.	With the help of neat sketch, discuss about floor mounted type substations.	**8**	**4**	**3**
OR					
8	a.	What is an outdoor substation? What are its features?	**7**	**4**	**3**
	b.	What are the advantages and disadvantages of pole mounted type substations? Explain.	**8**	**4**	**3**
UNIT-V					
9	a.	Explain in detail about Estimation and cost for 1000 Meter 400/230 Volt overhead transmission line with street lightning.	**15**	**5**	**4**
OR					
10	a.	Explain in detail about the type of support required for overhead distribution lines.	**8**	**5**	**4**
	b.	Discuss in detail about the mechanical design of overhead lines.	**7**	**5**	**3**

[B19ITOE01]

SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)

III B. Tech II Semester (R19) Regular Examinations

DATA STRUCTURES & ALGORITHMS

(Open Elective: offered by IT)

(Offered to: CE, ECE, EEE & ME)

MODEL QUESTIONPAPER

TIME: 3Hrs. **Max. Marks: 75M**

Answer ONE Question from EACH UNIT

All questions carry equal marks

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			CO	KL	M
		UNIT-I			
1	a)	Define data structure. Discuss different types of data structure their implementations applications.	CO1	K2	7
	b)	Explain the recursive merge sort algorithm to sort the following elements: 12, 25, 5, 9, 1, 84, 63, 7, 15, 4, 3.	CO2	K2	8
		OR			
2	a)	Write Recursive Binary Search algorithm. Search element 12 in the given list using Recursive Binary Search algorithm 2, 5, 12, 15, 23, 28, 36, 39, 45	CO2	K2	7
	b)	Rearrange following numbers using quick sort: 10, 6, 3, 7, 17, 26, 56, 32, 72	CO2	K3	8
		UNIT-II			
3	a)	Explain the procedure to evaluate postfix expression. Evaluate the following postfix expression 7 3 4 + - 2 4 5 / + * 6 / 7 +	CO3	K2	7
	b)	Discuss the algorithms for push and pop operations on a stack	CO3	K2	8
		OR			
4	a)	Give the structure of Queue ADT. Explain the operations in it.	CO3	K2	7
	b)	Convert the given infix expression A+B^C+(D*E/F)*G into its postfix expression, and evaluate the same using stack. Here A=3, B=5, C=2, D=7, E=4, F=1, G=8.	CO3	K3	8
		UNIT-III			
5	a)	Write an algorithm for representing the polynomial $6x^6 + 4x^3 - 2x + 10$ using linked lists.	CO3	K3	7
	b)	Write an algorithm to insert new node at the beginning, at middle position and at the end of a singly linked list.	CO3	K3	8
		OR			
6	a)	Write an algorithm to push and pop an element from linked stack	CO3	K3	7
	b)	Write an algorithm to delete an element anywhere from doubly linked list.	CO3	K3	8
		UNIT-IV			
7	a)	Explain Heap sort algorithm. Create Heap for the following elements and then sort them. (13, 102, 405, 136, 15, 105, 390, 432, 28, 444)	CO4	K3	7
	b)	Develop a binary search tree resulting after inserting the following integer keys 49, 27, 12, 11, 33, 77, 26, 56, 23, 6. (i) Check whether the tree is almost complete or not? (ii) Determine the height of the tree (iii) Write post order and pre-order traversals	CO4	K3	8
		OR			
8	a)	How to represent binary tree using arrays and linked list?	CO4	K2	7
	b)	**Construc**t an AVL tree by inserting the following elements successively C O M P U T E R	CO4	K2	8

UNIT-V					
9	a)	Explain Warshall's algorithm to find transitive closure of a graph with a suitable example.	CO3	K2	7
	b)	What is minimum cost spanning Tree? Explain the process of finding the minimum spanning tree with suitable example.	CO3	K2	8
OR					
10	a)	Explain Depth First Search algorithms in detail.	CO3	K2	7
	b)	Explain Dijkstra's algorithm with suitable example.	CO3	K2	8

[B19ITOE02]

SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)

III B. Tech II Semester (R19) Regular Examinations

DATABASE DESIGN & DEVELOPMENTMODEL

(Open Elective: offered by IT)

(Offered to: CE, ECE, EEE & ME)

MODEL QUESTIONPAPER

TIME: 3Hrs. **Max. Marks: 75M**

Answer ONE Question from EACH UNIT

All questions carry equal marks

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			CO	KL	M
UNIT - I					
1.	**a).**	Explain the advantages of DBMS.	CO1	K2	7M
	b).	Briefly explain about various database users and functions of DBA.	CO1	K2	8M
OR					
2.	**a).**	Draw the architecture of Database Management System and explain the function of each component.	CO1	K2	8M
	b).	Explain 2-tier and 3-tier application architectures.	CO1	K2	7M
UNIT - II					
3.	**a).**	Explain the concept of a weak entity set with an example.	CO2	K3	7M
	b).	Explain all integrity constraints with an example for each.	CO2	K2	8M
OR					
4.	**a).**	Consider a binary relationship of your choice with many-to-one cardinality and total participation. Translate the complete E-R diagram into a collection of tables.	CO2	K3	8M
	b).	A university database contains information about Professors (identified by empid) and Courses (identified by cid). Professors teach courses; each of the following situations describes the Teaches relationship. For each situation draw an ER diagram that describes it. i)Every professor must teach some course. ii) Every professor teaches exactly one course. iii) Every professor teaches exactly one course and every course must be taught by some professor.	CO2	K3	7M
UNIT - III					
5.	**a).**	Explain the steps in the evaluation of basic SQL Query with an example.	CO3	K2	5M
	b).	Consider the following schema and answer the following queries in SQL. Students(sid: string, sname:string, Date_of_Birth:date, GPA:real) Courses(cid:string, cname:string, credits:integer, offered_by:string) Enrolled(sid:string, cid:string) i)For each course offered by CSE department, find the total number of enrollments. ii) Find the sum of credits of all courses taken by student " S01". iii) Find the courses that have at least 10 enrollments. iv) Find the IDs of courses enrolled by youngest students.	CO3	K3	10M
OR					
6.	**a).**	Consider the following schema and answer the following queries in SQL. Students(sid: string, sname:string, Date_of_Birth:date, GPA:real) Courses(cid:string, cname:string, credits:integer, offered_by:string) Enrolled(sid:string, cid:string) i)Find the ids of students who had taken both the courses C01 and C02. ii) Write a correlated query to find the list of courses that are not taken by any student. iii)Find the departments that offer at least 5 courses.	CO3	K3	8M
	b).	Explain the architecture of DB2.	CO3	K2	7M

UNIT – IV					
7.	**a).**	Consider the schema R(A,B,C,D,E) and the list of functional dependencies F={A→BC, EC→D,D→A}. Determine candidate keys of R.	CO4	K3	7M
	b).	Explain 3rd Normal Form and Boyce-Codd Normal Form with suitable examples.	CO4	K3	8M
OR					
8.	**a).**	Explain multi valued dependency and 4th normal form.	CO4	K2	7M
	b).	Consider R(A,B,C,D,E) and the list of functional dependencies F={A→BC, EC→D,D→A}. What is the best normal form that R satisfies? Decompose R into a collection of 3NF relations.	CO4	K3	8M
UNIT - V					
9.	**a).**	Explain ACID properties of a transaction.	CO5	K2	7M
	b).	Explain the three phases of ARIES recovery algorithm.	CO5	K2	8M
OR					
10.	**a).**	Explain Locks, their compatibility and 2-Phase locking protocol to achieve concurrency control.	CO5	K2	7M
	b).	Explain 2 policies of deadlock prevention.	CO5	K2	8M

[B19ITOE03]

SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)

III B. Tech II Semester (R19) Regular Examinations

JAVA PROGRAMMING

(Open Elective: offered by IT)

(Offered to: CE, ECE, EEE & ME)

MODEL QUESTIONPAPER

TIME: 3Hrs. **Max. Marks: 75M**

Answer ONE Question from EACH UNIT

All questions carry equal marks

****

			CO	KL	M
UNIT - I					
1.	**a).**	Illustrate the concept of JVM with a Diagram.	**CO1**	**K3**	**7M**
	b).	Illustrate the differences between C, C++ and Java with a neat diagram	**CO1**	**K3**	**8M**
OR					
2.	**a).**	Illustrate the structure of a java program	**CO1**	**K3**	**7M**
	b).	Explain about Java buzz words	**CO1**	**K2**	**8M**
UNIT - II					
3.	**a).**	Write a java program to perform constructor overloading with an example	**CO2**	**K2**	**7M**
	b).	Explain class Declaration syntax in java and modifiers	**CO2**	**K2**	**8M**
OR					
4.	**a).**	Write a java program to perform method overloading.	**CO2**	**K2**	**7M**
	b).	Explain the keyword final how it is used in java	**CO2**	**K2**	**8M**
UNIT - III					
5.	**a).**	Explain polymorphism and its types. Construct a java program which Illustrates the functionality of method overloading and method overriding.	**CO3**	**K3**	**7M**
	b).	Write how Multiple Inheritance is possible in java with an example program.	**CO3**	**K3**	**8M**
OR					
6.	**a).**	Demonstrate an array? Write a java program to read an array of **n** elements and print them.	**CO3**	**K3**	**7M**
	b).	Write a java program to find second largest number in an array.	**CO3**	**K3**	**8M**
UNIT – IV					
7.	**a).**	Interpret the concept of packages in java.	**CO4**	**K2**	**7M**
	b).	Construct a java program that shows the functionality of creating a public class in an already existing user defined package.	**CO4**	**K2**	**8M**
OR					
8.	**a).**	Write a java program to create custom exception.	**CO4**	**K3**	**7M**
	b).	Illustrate 2 different ways of creating a thread in java with code.	**CO4**	**K3**	**8M**
UNIT - V					
9.	**a).**	Explain any 4 layout mangers in java with example code.	**CO5**	**K2**	**7M**
	b).	Write a java swing code to create a frame and add any five different components onto the frame.	**CO5**	**K3**	**8M**
OR					

10.	**a).**	Write a java program to explain event handling.	**CO5**	**K2**	**7M**
	b).	Explain JDBC Architecture and procedure to establish JDBC Database Connections.	**CO5**	**K2**	**8M**

[B19MEOE01]
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)
III B. Tech II Semester (R19) Regular Examinations
OPERATIONS RESEARCH
(Open Elective: offered by ME)
(Offered to: CE,CSE, ECE, EEE & IT)
MODEL QUESTIONPAPER

TIME: 3Hrs. **Max. Marks: 75M**

Answer ONE Question from EACH UNIT
All questions carry equal marks
****

<table>
<tr><th></th><th></th><th></th><th>CO</th><th>KL</th><th>M</th></tr>
<tr><td></td><td></td><td>UNIT-I</td><td></td><td></td><td></td></tr>
<tr><td>1.</td><td></td><td>Suppose an industry is manufacturing two types of products P1 and P2. The profits per Kg of the two products are Rs.30 and Rs.40 respectively. These two products require processing in three types of machines. The following table shows the available machine hours per day and the time required on each machine to produce one Kg of P1 and P2. Formulate the problem in the form of linear programming model and solve it by Graphical Method.
<table>
<tr><th>Profit/Kg</th><th>P1
Rs.30</th><th>P2
Rs.40</th><th>Total available Machine hours/day</th></tr>
<tr><td>Machine 1</td><td>3</td><td>2</td><td>600</td></tr>
<tr><td>Machine 2</td><td>3</td><td>5</td><td>800</td></tr>
<tr><td>Machine 3</td><td>5</td><td>6</td><td>1100</td></tr>
</table></td><td>1</td><td>K3</td><td>15</td></tr>
<tr><td></td><td></td><td>OR</td><td></td><td></td><td></td></tr>
<tr><td>2.</td><td></td><td>Find the solution of the following LPP:
Maximize $z = 3x_1 + 2x_2 + 2x_3$
subject to $x_1 + x_2 + 2x_3 \le 38$
$2x_1 + x_2 + x_3 \ge 24$
with $x_1 \ge 0,\ x_2 \ge 0,\ x_3 \ge 0$</td><td>1</td><td>K3</td><td>15</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td>UNIT-II</td><td></td><td></td><td></td></tr>
<tr><td>3.</td><td></td><td>Solve the following transportation problem.
<table>
<tr><th>Destination →
Origin ↓</th><th>D_1</th><th>D_2</th><th>D_3</th><th>D_4</th><th>Supply</th></tr>
<tr><td>O_1</td><td>5</td><td>3</td><td>6</td><td>2</td><td>19</td></tr>
<tr><td>O_2</td><td>4</td><td>7</td><td>9</td><td>1</td><td>37</td></tr>
<tr><td>O_3</td><td>3</td><td>4</td><td>7</td><td>5</td><td>34</td></tr>
<tr><td>Demand</td><td>16</td><td>18</td><td>31</td><td>25</td><td>90</td></tr>
</table></td><td>2</td><td>K3</td><td>15</td></tr>
<tr><td></td><td></td><td>OR</td><td></td><td></td><td></td></tr>
<tr><td>4.</td><td></td><td>Consider the problem of assigning five jobs to five persons. The assignment costs are given as follows. Determine the optimum assignment schedule.</td><td>2</td><td>K3</td><td>15</td></tr>
</table>

		Job Person 1 2 3 4 5 A 8 4 2 6 1 B 0 9 5 5 4 C 3 8 9 2 6 D 4 3 1 0 3 E 9 5 8 9 5			
		UNIT-III			
5.		Find the sequence that minimizes the total time required in performing the following jobs on three machines in order ABC. Processing times (in hours) are given in the following table : Job : 1 2 3 4 5 Machine *A* : 8 10 6 7 11 Machine *B* : 5 6 2 3 4 Machine *C* : 4 9 8 6 5	**3**	**K3**	**15**
		OR			
6.		An auto parts supplier sells Hardy-brand batteries to car dealers and auto mechanics. The annual demand is approximately 1,200 batteries. The supplier pays $28 for each battery and estimates that the annual holding cost is 30 percent of the battery's value. It costs approximately $20 to place an order (managerial and clerical costs). The supplier currently orders 100 batteries Per month. a. Determine the ordering, holding and total inventory costs for the current order quantity. b. Determine the economic order quantity (EOQ). c. How many orders will be placed per year using the EOQ? d. Determine the ordering, holding, and total inventory costs for the EOQ? e. How has ordering cost changed? Holding cost? Total inventory cost?	**3**	**K3**	**15**
		UNIT-IV			
7.		Solve the following 6x2 game graphically. $\begin{pmatrix} 1 & -3 \\ 3 & 5 \\ -1 & 6 \\ 4 & 1 \\ 2 & 2 \\ -5 & 0 \end{pmatrix}$	**4**	**K3**	**15**
		OR			
8.		A dental surgery has two operation rooms. The service times are assumed to be	**4**	**K3**	

		independent, exponentially distributed with mean15 minutes. Andrew arrives when both operation rooms are empty. Bob arrives 10 minutes later while Andrew is still under medical treatment. Another 20 minutes later Caroline arrives and both Andrew and Bob are still under treatment. No other patient arrives during this 30-minute interval. a. What is the probability that Andrew will be ready before Bob? b. What is the probability that Caroline will be ready before Andrew? c. What is the probability that Caroline will be ready before Bob?			
		UNIT-V			
9.		The following are the time estimates and the precedence relationships of the activities in a project network: Activity | A | B | C | D | E | F | G | H | I | J | K Predecessor activity | - | - | - | A | B | B | C | E | D | F,G | H,I Time estimate (weeks) | 4 | 7 | 3 | 6 | 4 | 7 | 6 | 10 | 3 | 4 | 2 Draw the project network diagram. Determine the critical path, the project completion time, Total float, Free float and Independent float.	**5**	**K3**	**15**
		OR			
10.		The time estimates (in weeks) and other characteristics of a project are given below. Activity | 1-2 | 1-6 | 2-3 | 2-4 | 3-5 | 4-5 | 6-7 | 5-8 | 7-8 Optimistic time | 3 | 2 | 6 | 4 | 8 | 3 | 3 | 2 | 8 Most likely time | 6 | 5 | 12 | 5 | 11 | 7 | 9 | 4 | 16 Pessimistic time | 9 | 8 | 18 | 6 | 14 | 11 | 15 | 6 | 18 Determine (i) Critical path (ii) Expected to complete the project and also prepare activity schedule.	**5**	**K3**	**15**

CO-COURSE OUTCOME KL-KNOWLEDGE LEVEL M-MARKS

[B19MEOE02]
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)
III B. Tech II Semester (R19) Regular Examinations
OPERATIONS MANAGEMENT
(Open Elective: offered by ME)
(Offered to: CE,CSE, ECE, EEE & IT)
MODEL QUESTIONPAPER

TIME: 3Hrs. **Max. Marks: 75M**

Answer ONE Question from EACH UNIT
All questions carry equal marks
****

			CO	KL	M
		UNIT-I			
1.	**a).**	Define Operations Management. Explain in brief the functions of operations management.	**CO1**	**KL3**	**8**
	b).	What is forecasting? State the benefits and costs associated with forecasting.	**CO1**	**KL3**	**7**
		OR			
2.	**a).**	Define productivity. Explain the factors affecting productivity.	**CO1**	**KL3**	**8**
	b).	State the classification of production system. Explain any one production system with example.	**CO1**	**KL3**	**7**
		UNIT-II			
3.	**a).**	List the various factors influencing plant location.	**CO2**	**KL3**	**8**
	b).	Differentiate between rural and urban sites	**CO2**	**KL3**	**7**
		OR			
4.	**a).**	Sketch and explain any two types of plant layouts.	**CO2**	**KL3**	**8**
	b).	What is facility layout? What factors determines the type of layout used in an organisation.	**CO2**	**KL3**	**7**
		UNIT-III			
5.	**a).**	What do you mean by inventory? What are the types of inventory?	**CO3**	**KL3**	**8**
	b).	Explain in detail about ABC analysis using an example.	**CO3**	**KL3**	**7**
		OR			
6.	**a).**	Define MRP. What are the main inputs and outputs of MRP?	**CO3**	**KL3**	**8**
	b).	State the benefits and limitation of MRP	**CO3**	**KL3**	**7**
		UNIT-IV			
7.	**a).**	List the common strategies used in aggregate planning. Explain in detail about any two.	**CO3**	**KL3**	**8**
	b).	What is aggregate planning? What are the objectives of aggregate planning?	**CO3**	**KL3**	**7**
		OR			
8.	**a).**	What are the functions of master process for scheduling	**CO3**	**KL3**	**8**
	b).	Explain in detail about any two standard scheduling methods.	**CO3**	**KL3**	**7**
		UNIT-V			
9.	**a).**	Discuss the need for inventory.	**CO4**	**KL3**	**8**
	b).	Derive the equation for Economic Order Quantity.	**CO4**	**KL3**	**7**
		OR			
10.	**a).**	What is ERP? Write the benefits and imitations of ERP	**CO4**	**KL3**	**8**
	b).	Write the importance of purchasing and supply chain management.	**CO4**	**KL3**	**7**

CO-COURSE OUTCOME **KL-KNOWLEDGE LEVEL** **M-MARKS**

[B19MEOE03]

SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)

III B. Tech II Semester (R19) Regular Examinations

TOTAL QUALITY MANAGEMENT

(Open Elective: offered by ME)

(Offered to: CE,CSE, ECE, EEE & IT)

MODEL QUESTIONPAPER

TIME: 3Hrs. **Max. Marks: 75M**

Answer ONE Question from EACH UNIT

All questions carry equal marks

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			CO	KL	M
		UNIT-I			
1.	**a).**	What is the role of process and product control on quality?	**CO1**	**KL3**	**8**
	b).	List and discuss about Variable control charts.	**CO1**	**KL3**	**7**
		OR			
2.	**a).**	What is acceptance sampling? What are its advantages and disadvantages?	**CO1**	**KL3**	**8**
	b).	Write the benefits of TQM.	**CO1**	**KL3**	**7**
		UNIT-II			
3.	**a).**	Discuss in detail about internal customers and external customers.	**CO2**	**KL3**	**8**
	b).	Discuss about buyer-supplier relationships towards building quality.	**CO2**	**KL3**	**7**
		OR			
4.	**a).**	Define bench marking and explain the process of bench marking.	**CO2**	**KL3**	**8**
	b).	Writ the limitation of bench marking.	**CO2**	**KL3**	**7**
		UNIT-III			
5.	**a).**	Describe the transition from traditional to TQM approach.	**CO3**	**KL3**	**8**
	b).	Explain briefly what is meant by quality circle.	**CO3**	**KL3**	**7**
		OR			
6.	**a).**	Write a note on Systems approach to TQM.	**CO3**	**KL3**	**8**
	b).	Explain how do you measure productivity.	**CO3**	**KL3**	**7**
		UNIT-IV			
7.	**a).**	What are different quality costs and explain how do you measure?	**CO3**	**KL3**	**7**
	b).	Explain up to what extent accounting system contribute in building quality?	**CO3**	**KL3**	**8**
		OR			
8.	**a).**	What is the importance of analyzing quality cost information?	**CO3**	**KL3**	**8**
	b).	What is the need for separate quality accounting system?	**CO3**	**KL3**	**7**
		UNIT-V			
9.	**a).**	Discuss in detail standards of ISO9000 series.	**CO4**	**KL3**	**8**
	b).	Write the objectives of ISO 9000?	**CO4**	**KL3**	**7**
		OR			
10.	**a).**	How do you document services associated with ISO9000 series?	**CO4**	**KL3**	**8**
	b).	What are the issues and benefits in ISO9000 certification?	**CO4**	**KL3**	**7**

CO-COURSE OUTCOME **KL-KNOWLEDGE LEVEL** **M-MARKS**

[B19BSOE01]
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)
III B. Tech II Semester (R19) Regular Examinations
COMPUTATIONAL STATISTICS WITH R
(Open Elective: offered by EM&H)
(Offered to: CE,CSE, ECE, EEE ,IT & ME)
MODEL QUESTIONPAPER

TIME: 3Hrs. **Max. Marks: 75M**

Answer ONE Question from EACH UNIT
All questions carry equal marks
****

Q.No.	Questions	CO	KL	M
	Unit-1			
1.a)	Define moment generating function and write its properties.	CO1	K2	7M
b)	Define Random Variable. If X is a continuous random variable with probability density function given by $f(x) = \begin{cases} kx, & (0 \le x < 2) \\ 2k, & (2 \le x < 4) \\ -kx + 6k, & (4 \le x < 6) \end{cases}$ find k and mean value of x.	CO1	K2	8M
	(OR)			
2.a)	Explain in detail about vectors in R	CO1	K2	8M
b)	Explain about basic math and variables of R	CO1	K2	7M
	Unit-2			
3.a)	Describe point estimation and interval estimation with suitable examples	CO2	K2	7M
b)	Explain criteria of good estimation. If $x_1, x_2, ---, x_n$ is a random sample from a normal population N (μ, 1). Show that t = $t = \frac{1}{n}\sum_{i=1}^{n} x_i^2$, is an unbiased estimator of $\mu^2 + 1$.	CO2	K3	8M
	(OR)			
4	Write about R commands for Probability distribution functions.	CO2	K3	15M
	Unit-3			
5	A population consists of five members 2,3,6,8 and 11. Consider all possible samples of size two which can be drawn with replacement from this population. Find (i) the mean of the population. (ii) the variance of the population. (iii) the mean of sampling distributions of means (iv) the standard deviation of the sampling distribution of means	CO3	K2	15M
	(OR)			
6.	Write R functions for applyingt-test,F-test and chi-square tests.	CO4	K3	15M
	Unit-4			
7	Given	CO5	K3	15M

Treatment	Fabric			
	1	2	3	4
1	17.6	19.6	18.4	19.8
2	19.2	20.4	19.8	20.7

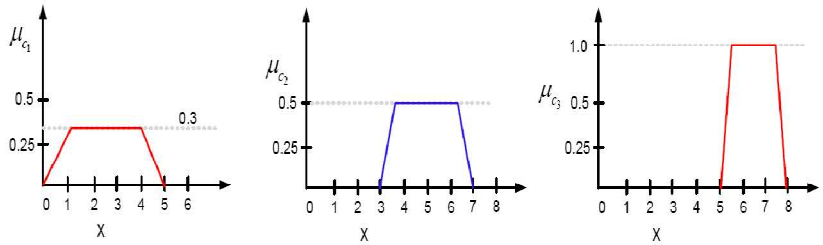
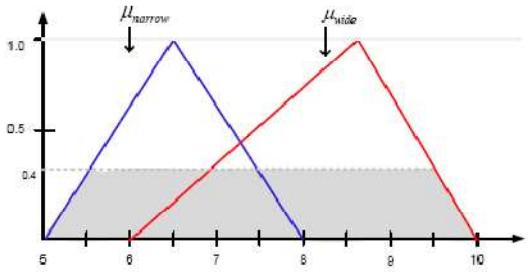
	3	17.2	19.0	17.1	17.3			
	4	17.0	20.1	17.1	17.7			
	5	17.4	18.8	17.8	16.5			
	Perform ANONA to test whether there is any significant difference between treatments and fabrics.							
	(OR)							
8.	Describe the R commands for forecasting the trends					CO5	K2	15M
	Unit-5							
9.a)	A coin is tossed 20 times and the following sequence of heads (H) and tails (T) is obtained. H T T H H T T H T H HH T T H H T H HH Use Run test to determine at 5% level of significance if the coin is unbiased.					CO6	K3	8M
b)	Explain 1. Procedure of Testing of Hypothesis 2. Statement of Neyman Pearson Lemma					CO6	K3	7M
	(OR)							
10a)	Write a R program for Wilcoxon signed rank test					CO6	K2	8M
b)	Construct R program on Spearmen and Kendall's test					CO6	K2	7M

[B19BSOE02]
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)
III B. Tech II Semester (R19) Regular Examinations
FUZZY SETS AND FUZZY LOGIC
(Open Elective: offered by EM&H)
(Offered to: CE,CSE, ECE, EEE ,IT & ME)
MODEL QUESTIONPAPER

TIME: 3Hrs. **Max. Marks: 75M**

Answer ONE Question from EACH UNIT
All questions carry equal marks
****

Q. No.		Question	CO	KL	Marks
		UNIT-I			
1	A	Develop a reasonable membership function for the following fuzzy sets based on height measured in centimeters: (i) "tall" (ii) "short" (iii) "not short"	CO -1	K3	7
	B	Develop the fuzzy membership functions for each of the following (i) Person X is considerably heavier than 100 pounds (ii) Car Z costs approximately \$30,000 (iii) μ_A (x) = 0 for x ≤ 5 and 1-(x-5)^2 when x > 5	CO -1	K3	8
		OR			
2		We want to compare two sensors based upon their detection levels and gains setting for a universe of discourse of gain settings X = {0, 20, 40, 60, 80, 100}, the sensor detection levels for the monitoring of a standard item provides typical membership functions to represent the detection levels for each of the sensors; these are given below in standard discrete form $S1=\left\{\frac{0}{0}+\frac{0.5}{20}+\frac{0.65}{40}+\frac{0.85}{60}+\frac{1}{80}+\frac{1}{100}\right\}$ $S2=\left\{\frac{0}{0}+\frac{0.45}{20}+\frac{0.6}{40}+\frac{0.8}{60}+\frac{0.95}{80}+\frac{1}{100}\right\}$ Find the following membership functions using standard fuzzy operations (i) $\mu_{S1 \cup S2}$ (x) (ii) $\mu_{S1 \cap S2}$ (x) (iii) $\mu_{\overline{S1} \cup S1}$ (x) (iv) $\mu_{\overline{S1} \cap S2}$ (x) (v) $\mu_{S1 \cap \overline{S2}}$ (x)	CO -1	K3	15
		UNIT-II			
3		In the field of computer networking there is an imprecise relationship between the level of use of a network communication bandwidth and the latency experienced in peer-to-peer communications. Let X be the fuzzy set of use levels (in terms of percentage of full bandwidth used) and Y be a fuzzy set of latencies (in milliseconds) with the following membership functions: $X=\left\{\frac{0.2}{10}+\frac{0.5}{20}+\frac{0.8}{40}+\frac{1}{60}+\frac{0.6}{80}+\frac{0.1}{100}\right\}$ $Y=\left\{\frac{0.3}{0.5}+\frac{0.6}{1}+\frac{0.9}{1.5}+\frac{1}{4}+\frac{0.6}{8}+\frac{0.3}{20}\right\}$ find the Cartesian product represented by R = X x Y. Now, suppose we have a second fuzzy set of bandwidth usage given by $Z=\left\{\frac{0.3}{10}+\frac{0.6}{20}+\frac{0.7}{40}+\frac{0.9}{60}+\frac{1}{80}+\frac{0.5}{100}\right\}$ Find S = Z o R using max-min composition.	CO -2	K3	15
		OR			

4	A	In a computer engineering different logic families are often compared on the basis of their power-delay product. T he fuzzy set F is the logic families F = {NMOS, CMOS, TTL, ECL, JJ}.The range of delay time D = {0.1, 1, 10, 100} in Nano seconds. The power dissipation in micro watts P = {0.01, 0.1, 1, 10, 100}. and the fuzzy relations R_1 (D x F) and R_2 (F x P) are as given below: $R_1 = \begin{array}{c} \\ 0.1 \\ 1 \\ 10 \\ 100 \end{array} \begin{array}{c} \begin{array}{ccccc} N & C & T & E & J \end{array} \\ \begin{bmatrix} 0 & 0 & 0 & .6 & 1 \\ 0 & .1 & .5 & 1 & 0 \\ .4 & 1 & 1 & 0 & 0 \\ 1 & .2 & 0 & 0 & 0 \end{bmatrix} \end{array}$ and $R_2 = \begin{array}{c} \\ N \\ C \\ T \\ E \\ J \end{array} \begin{array}{c} \begin{array}{ccccc} .01 & .1 & 1 & 10 & 100 \end{array} \\ \begin{bmatrix} 0 & .4 & 1 & .3 & 0 \\ .2 & 1 & 0 & 0 & 0 \\ 0 & 0 & .7 & 1 & 0 \\ 0 & 0 & 0 & 1 & .5 \\ 1 & .1 & 0 & 0 & 0 \end{bmatrix} \end{array}$ By using max-min composition, obtain a fuzzy relation between delay time and power dissipation.	CO -2	K3	8
	B	Let R be a fuzzy relation defined on the set of cities representing the concept 'very near'. Discuss the properties of fuzzy equivalence relation.	CO -2	K3	7
		UNIT-III			
5	A	The following are the fuzzified outputs of three fired rules:  Find the crisp output from the union of fuzzified outputs by using any one of the defuzzification methods.	CO -3	K3	8
	B	Suppose a fuzzy set young is defined as follows young = {(15,0.5), (20,0.8), (25,0.8), (30,0.5), (35,0.3)}. Find the crisp value of young using mean of maxima method	CO -3	K3	7
		OR			
6	A	Explain centroid method for defuzzification.	CO -4	K3	7
	B	The width of a road as narrow and wide is defined by two fuzzy sets, whose membership functions are plotted as shown below. If a road with its degree of membership value is 0.4 then what will be its width (in crisp) measure.  	CO -4	K3	8

		UNIT-IV			
7	A	Construct a truth table for $(p \rightarrow r) \Lambda (q \rightarrow r) V (\sim p \Lambda q)$	CO -5	K3	7
	B	Write the symbolic form of the following statement "you cannot ride the roller coaster if you are under 4 feet tall unless you are older than 16 years old"	CO -5	K3	8
		OR			
8		Given P : Bob is brilliant ; T(P) = 0.8; Q : John is brilliant; T(Q) = 0.6; Find the truth values of the following fuzzy propositions (i) Bob is not brilliant (ii) Bob is brilliant and so is John (iii) Either Bob or John is brilliant (iv) if Bob is brilliant then so is John (v) Bob is brilliant if and only if John is brilliant	CO -5	K3	15
		UNIT-V			
9		Explain in detail any one application of Fuzzy Logic Controller.	CO -6	K3	15
		OR			
10		Explain how would you design a washing machine to have fuzzy inference in a real world environment. In your discussion include the following factors (i) A practical choice of the fuzzy input & output variables (ii) A practical no. of quantizations and choice of linguistic labels (iii) Draw and indicate a reasonable membership functions for each fuzzy variable. (iv) Indicate practical values of universe of discourse (v) Three examples of rules (vi) The most practical approach of defuzzification technique	CO -6	K3	15