AR16

CODE: 16OE3031 SET-2

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.Tech I Semester Supplementary Examinations, January-2019
FUNDAMENTALS OF FUZZY LOGIC
(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. Considering company's probability is based upon the particular clients spending habits, Two fuzzy sets are defined as: **14M**

$A = Large\ spenders = \left\{\frac{0}{5000}, \frac{0}{10000}, \frac{0.2}{20000}, \frac{0.5}{50000}, \frac{1}{55000}, \frac{0.6}{70000}, \frac{0}{10000}\right\}$ *and*

$B = profitable\ clients = \left\{\frac{0}{5000}, \frac{0.3}{8000}, \frac{1}{10000}, \frac{0.7}{20000}, \frac{0.6}{40000}, \frac{0}{50000}\right\}$ find 1. $A \cup B$

2. $A \cap B$, 3. A^c 4. B^c 5. $A \cap B^c$ 6. $(A \cup B)^c = A^c \cap B^c$ 7. $A^c \cup B$

(OR)

2. For $fuzzy\ sets\ V = \left\{\frac{0.1}{2.98}, \frac{0.3}{2.99}, \frac{0.7}{3}, \frac{0.4}{3.01}, \frac{0.2}{3.02}\right\}$, $T = \left\{\frac{0.1}{0.05}, \frac{0.3}{0.06}, \frac{0.3}{0.07}, \frac{0.4}{0.08}, \frac{0.5}{0.09}, \frac{1}{0.1}\right\}$ and $Z = \left\{\frac{0.1}{0}, \frac{0.7}{0.5}, \frac{0.3}{1}\right\}$. Find 1. $S = T \times Z$ 2. $R = V \times T$ 3. $M = R \circ S$. **14M**

UNIT-II

3. **(a)** Let X= $\{x_1, x_2, x_3\}$, $Y = \{y_1, y_2\}$ be the universal sets, $A = \left\{\frac{0.6}{x_1}, \frac{0.9}{x_2}, \frac{1}{x_3}\right\}$, $B = \left\{\frac{0.6}{y_1}, \frac{1}{y_2}\right\}$, B' $\left\{\frac{0.5}{x_1}, \frac{0.9}{x_2}, \frac{1}{x_3}\right\}$ be the fuzzy sets. Suppose we have fuzzy propositions, Rule P: If x is A ther B , Fact Q: y is B' then estimate A' using generalized Modus Tollens rule. **7M**

(b) For the universe $X = \{-5,5\}$, two fuzzy sets are defined as **7M**

$$A = \text{Zero} = \left\{\frac{0}{-2}, \frac{0.5}{-1}, \frac{1}{0}, \frac{0.5}{1}, \frac{0}{2}\right\}, B = \text{positive medium} = \left\{\frac{0}{0}, \frac{0.6}{1}, \frac{1}{2}, \frac{0.6}{3}, \frac{0}{4}\right\}.$$

(1).Construct the relation for the rule "if A then B"

(2). If we introduce new antecedent $A' = \text{Positive small} = \left\{\frac{0}{-2}, \frac{0.1}{-1}, \frac{0.3}{0}, \frac{0.6}{1}, \frac{1}{2}\right\}$ find new consequent B', using max min composition i.e $B' = A' \circ R$.

(OR)

4. Let $A = \left\{\frac{0.1}{x_1}, \frac{0.9}{x_2}, \frac{0}{x_3}\right\}, B = \left\{\frac{0}{y_1}, \frac{1}{y_2}, \frac{0}{y_3}\right\}$ be fuzzy sets defined on a universe $X = \{x_1, x_2, x_3\}$ & $Y = \{y_1, y_2, y_3\}$ respectively. If C = = $\left\{\frac{0}{y_1}, \frac{0.2}{y_2}, \frac{0.3}{y_3}\right\}$ then find the truth value of the conclusion $A \rightarrow C$ using generalized Hypothetical Syllogism of the two implications $A \rightarrow B$ and $B \rightarrow C$. **14M**

UNIT-III

5 Construct a fuzzy set using "Lagranges Interpolation" method for the following {(0,0), (0.5,0.2), (0.8,0.9), (1,1), (1.2,0.9), (1.5,0.2), (2,0)}. Draw the diagrams.

(OR)

6 **(a)** Explain the "Direct method with one expert" in construction of a fuzzy set. Give an examp **7M**

(b) Explain the method of construction of fuzzy set. Given an example. **7M**

UNIT-IV

7. (a) Explain Fuzzy Controllers with diagram and given an example. **7M**

(b) Explain the working of "Fuzzy Rule Base". **7M**

(OR)

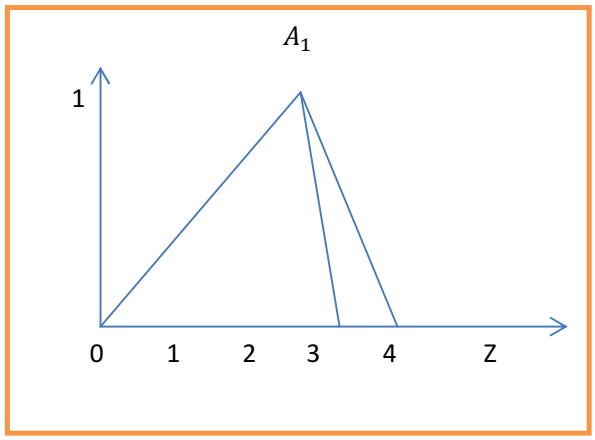
8. (a) Explain the working of "Fuzzy Inference Engine". **7M**

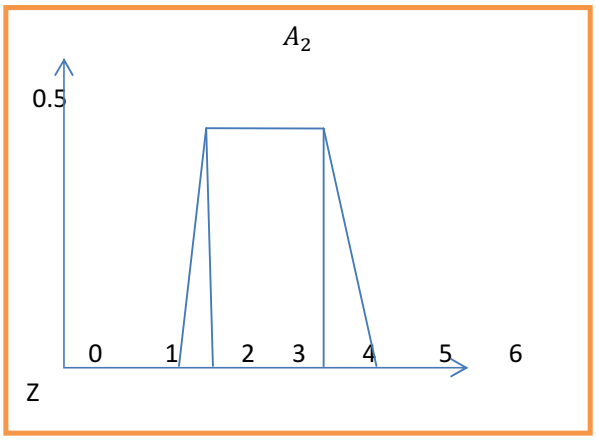
(b) Explain the process of Fuzzification. **7M**

UNIT-V

9. Fuzzy set A_1& A_2 are given by **14M**

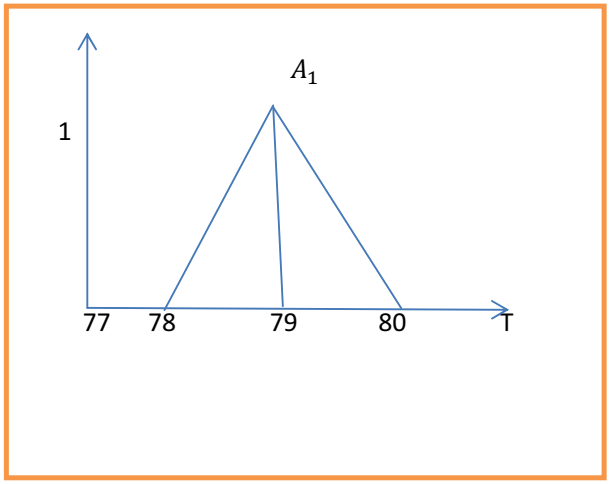
Calculate the defuzzified value Z^* using (a)Centroid Method (b)Center of Sums method (c) Mean of Maxima method.

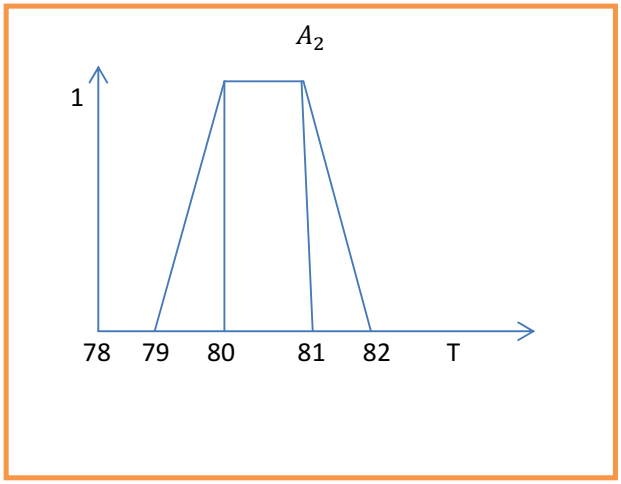




(OR)

10. Given two fuzzy sets A_1& A_2 as shown below, Calculate the defuzzified value T^* using (a)Centroid Method, (b)Center of Sums method, (c)Mean of Maxima method. **14M**





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AR16

CODE: 16OE3032 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech I Semester Supplementary Examinations, January-2019

ENVIRONMENTAL IMPACT ASSESSMENT

(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 preparation of Environmental Base Map.	7M
	b)	Explain the classification of Environmental Parameters.	7M
		(OR)	
2.	a)	Explain about the Initial Environmental Examination.	7M
	b)	Explain the limitations of EIA.	7M

UNIT-II

3.	a)	Explain about the criteria for selection of EIA methodology.	7M
	b)	Describe about the quality index method for carrying EIA.	7M
		(OR)	
4.	a)	Explain the network method of EIA for paper mill impacts	7M
	b)	Describe the cost benefit analysis	7M

UNIT-III

5.	a)	Write the causes and effects of deforestation.	8M
	b)	Explain about Environmental assessment process for fauna issues on infrastructure projects.	6M
		(OR)	
6.	a)	Differentiate between deforestation and forest degradation.	7M
	b)	Describe how impact assessment will be done on wildlife and forests with regard to a highway development project.	7M

UNIT-IV

7.	a)	What is Environmental Audit?	7M
	b)	Explain the objectives of Environmental audit.	7M
		(OR)	
8.	a)	Discuss about the advantages of Environmental Audit.	7M
	b)	Explain the types of Audit.	7M

UNIT-V

9.	a)	Explain about the water act.	7M
	b)	What are the major functions of CPCB and SPCBs.	7M
		(OR)	
10.	a)	Explain about the wild life act.	7M
	b)	Discuss about the procedure for conducting environmental impact assessment report	7M

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AR16

CODE: 16OE3034 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech I Semester Supplementary Examinations, January-2019

ELEMENTS OF WORKSHOP TECHNOLOGY

(Open Elective)

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

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 and classify forming processes. 5M

   b) Explain any one of the forming processes with neat sketch. 9M

(OR)

2. List out metal joining processes and explain any four metal joining processes with neat sketches. 14M

UNIT-II

3. Explain different cutting tools in carpentry. 14M

(OR)

4. List out different carpentry joints and explain Half-lap joint and Mortise & Tenon joint 14M

UNIT-III

5. Explain marking and measuring tools in fitting. 14M

(OR)

6. Explain different fitting operations with neat sketches. 14M

UNIT-IV

7. Explain the following hand tools in forging with neat sketches. 14M

   i)Chisels ii) Swages and iii) fullers

(OR)

8. Explain the following forging operations 14M

   i) Punching & drifting ii) swaging and iii) fullering

UNIT-V

9 a) Define sheet metal work. 5M

   b) List out and explain metals used for sheet metal work. 9M

(OR)

10. Explain the following sheet metal operations 14M

    i) shearing ii) bending iii) drawing iv) squeezing

AR16

CODE: 16OE3035 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech I Semester Supplementary Examinations, January-2019

INTRODUCTION TO SIGNAL PROCESSING

(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 classification of signals with examples.	10M
	b)	Explain the stability property of the system and give one example	4M
		(OR)	
2.	a)	For the following systems, check for causality, linearity and stability. i. $y(n) = x(n-1)+x(2n)+y(n-1)$ ii. $y(n) = x^2(n)$ iii. $y(n) = x(n) + x(n+1)$	9M
	b)	Explain the concept of convolution	5M

UNIT-II

3.	a)	List all the properties of DFS with expressions and derive any three properties	10M
	b)	Find the DFT of the sequence $x(n) = \{ -2, -4, 5, -7, 2\}$.	4M
		(OR)	
4.	a)	Find the linear convolution between the sequences $x_1(n)$ and $x_2(n)$ using DFTs and IDFTs. $x_1(n)=\{1, 2, 3, 4\}$ and $x_2(n)=\{4, 5, 6\ 7\}$.	10M
	b)	Find the relation between Fourier transform and Z- Transform	4M

UNIT-III

5.	a)	Find the IDFT of the sequence $x(n) = \{1, 1, 1, 1, 1, 1, 1, 1\}$ using DITFFT radix-2 algorithm.	8M
	b)	Draw the butterfly structure of radix -2 DITFFT algorithm for N=8.	6M
		(OR)	

6. a) Find the DFT of the sequence x(n)={1, 0, 1, 0, 1, 0, 1, 0} using radix-2 DIFFFT algorithm. 8M
   b) Calculate the total number of complex multiplications and complex additions in N-point radix-2 DITFFT algorithm 6M

UNIT-IV

7. a) Find the digital filter transfer function H(z) from the analog filter transfer function $H(s)=(1-2s+3s^2)/(1+3s+11s^2)$ using bilinear transformation with T=1sec. 7M
   b) Explain the procedure for designing analog lowpass IIR Butterworth filter 7M

(OR)

8. a) Determine the system function H(s) using Butterworth filter approximation that meets the following specifications. 10M
   i) 3dB ripple in the passband $0 \leq |\omega| \leq 0.4\pi$ ii) At least 27 dB attenuation in the stopband $0.45\pi \leq |\omega| \leq \pi$.
   b) Write down the steps for designing IIR low pass Chebyshev filter 4M

UNIT-V

9. a) Mention the advantages of windowing techniques 4M
   b) The desired frequency response of a low pass filter is 10M

$$H_d(e^{jw}) = \begin{cases} e^{-j3w} & \frac{-3\pi}{4} \leq w \leq \frac{3\pi}{4} \\ 0 & elsewhere \end{cases}$$

Determine $H(e^{i\omega})$ for N=5 using hanning window

(OR)

10. a) Explain the Hamming window. Draw the neat sketch of hamming window for N=11. 9M
    b) Distinguish between FIR and IIR digital filters 5M

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AR16

CODE: 16OE3036 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech I Semester Supplementary Examinations, January-2019

SOCIAL NETWORKS

(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)	Discuss about Social Networks?	7M
	b)	Explain Emergence of Social Web?	7M
		(OR)	
2.	a)	Explain the Limitation of Current Web?	7M
	b)	Explain the development of semantic Web?	7M

UNIT-II

3.	a)	Define Social Networks Analysis?	7M
	b)	Explain development of Social Network Analysis?	7M
		(OR)	
4.	a)	Discuss Key Concepts and Measures in Network Analysis?	7M
	b)	Explain the following	
		i) 2D lattice	4M
		ii) A tree with no loops	3M

UNIT-III

5.	a)	Explain Electronic discussion networks?	7M
	b)	Explain Web Based Networks?	7M
		(OR)	
6.	a)	Explain the following	
		i) Co-occurrences	3M
		ii) group communication	4M
	b)	W rite short notes on web data and blogs?	7M

UNIT-IV

7.	a)	Discuss ontologies and their role in the semantic web?	7M
	b)	W rite short notes on OWL.	7M
		(OR)	
8.	a)	Explain UML VS E/R Model?	7M
	b)	Explain XML Schema VS XML?	7M

UNIT-V

9.	a)	Discuss Visualization of social network analysis?	7M
	b)	W rite short notes on Representation and storage.	7M
		(OR)	
10.	a)	Discuss Methodology of SNA?	7M
	b)	Explain different types of knowledge sources?	7M

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AR16

CODE: 16OE3037 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

III B.Tech I Semester Supplementary Examinations, January-2019

FUNDAMENTALS OF COMPUTER GRAPHICS

(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)	Briefly explain about the working of CRT with a neat diagram	7M
	b)	Draw the architecture of a simple raster graphics system	7M
		(OR)	
2.	a)	Discuss any six application areas of Interactive computer graphics	10M
	b)	Write about Shadow-mask technique of Color CRT Monitors.	4M

UNIT-II

3.	a)	Write the algorithms for Boundary Fill and Flood Fill.	7M
	b)	Write the DDA Line drawing algorithm and Generate Line between (0,0) and (8,4).	7M
		(OR)	
4.	a)	Explain the steps in midpoint circle drawing algorithm and Calculate the pixels for radius is 10 and center is (0,0).	7M
	b)	Write Difference between DDA and Bresenhams Line Drawing Algorithms	7M

UNIT-III

5.	a)	Explain basic 2D transformations- Translation, Rotation and Scaling	7M
	b)	Show that the composition of two rotation is additive by concatenating the matrix representations for $R(\theta_1)\ R(\theta_2) = R(\theta_1+\theta_2)$	7M
		(OR)	
6.	a)	Write about Reflection Transformation and find reflected object of a square with diagonal points A(3,5), B(5,5), C(5,7) and D(3,7) is reflected about the line y = -x	7M
	b)	Explain General Pivot-Point Rotation	7M

UNIT-IV

7.	a)	Derive the Window-to-Viewport Transformation	7M
	b)	Explain about 3-D basic transformations	7M
		(OR)	
8.	a)	Explain the Cohen – Sutherland line clipping algorithm	7M
	b)	Discuss briefly about classification of projections.	7M

UNIT-V

9.	a)	Explain about scan line method	7M
	b)	Explain the design of animation sequence.	7M
		(OR)	
10.	a)	What is meant by Z-buffer?	7M
	b)	Briefly write about morphing in computer animations.	7M

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AR13

CODE: 13EC3017 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.Tech I Semester Supplementary Examinations, January-2019
PULSE AND DIGITAL CIRCUITS
(Electrical and Electronics Engineering)

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

PART-A

ANSWER ALL QUESTIONS **[1 x 10 = 10 M]**

1. a) Distinguish between the linear and non-linear wave shaping circuits.
   b) Define Rise time? Give the relations between rise time and bandwidth?
   c) State the clamping circuit theorem
   d) Write the applications of Clamping Circuit
   e) Define Transition time of a diode
   f) Differentiate between sampling gates and logic gates?
   g) How the effect of loading over come in Bistable Multivibrator.
   h) Define terms UTP and LTP?
   i) Which amplifier is used in miller time base generator?
   j) Write the Expression for Sweep speed in the exponential charging of a Capacitor

PART-B

Answer one question from each unit **[5x12=60M]**

UNIT-I

2. a) A 1KHz square wave output from an amplifier has rise time tr = 250 ns and tilt = 10%, determine the upper and lower frequencies. 6M
   b) A 10HZ symmetrical square wave whose peak-to-peak amplitude is2V is applied to a High pass RC circuit whose lower 3-db frequency is 5HZ. Calculate and sketch the output waveform? 6M

(OR)

3. a) Explain about RL and RLC series Circuits When the input is step is applied 6M
   b) Explain differentiator with the help of neat sketches 6M

UNIT-II

4. a) Compare series diode clipper and shunt diode clipper. 6M
   b) Draw the diode shunt clipper that clips the sine wave signal above +5V and below -5V. 6M

(OR)

5. a) Draw the circuit of a shunt diode positive peak clipper. Assume Rf=50Ω, V_γ=0.6V, Rr=2MΩ, R=20KΩ and VR=+15V. Sketch the transfer characteristics when the input voltage varies between -20V and +20V. Indicate the slopes, voltage levels Vo(max) and Vo(min) and the region where the diode conducts. Also sketch the input/output waveforms, if a sine wave of 20V peak is applied as an input.If a load resistance of 30KΩ is connected across the output terminals, sketch the transfer characteristics and the output wave for a 20V peak sine wave input? 6M

b) Give the circuits of different types of shunt clippers and explain their operation with the help of their transfer characteristics? 6M

UNIT-III

6. a) Explain how a transistor can be used as a switch. 6M

b) Explain the operation of Fixed-Bias Bistable multivibrator with circuit diagram and waveforms. 6M

(OR)

7. a) Explain the saturation parameters of a transistor 6M

b) Explain the working of a Selfbias Bistable multivibrator circuit with the help of waveforms and circuit diagram. 6M

UNIT-IV

8. a) With the help of neat circuit diagram and waveforms, explain the working of a collector coupled Astable Multivibrator? Obtain the expression for frequency in Astable Multivibrator 6M

b) Explain how Schmitt trigger circuit act as a switch. 6M

(OR)

9. a) Explain with the help of neat circuit diagram the principle of operation of monostable multivibrator, and derive an expression for pulse width 6M

b) Explain the working of a collector coupled Astable Multivibrator. 6M

UNIT-V

10. a) With the help of neat diagram explain the working of transistor Bootstrap time base generator 6M

b) Explain any one method of generating time base waveform 6M

(OR)

11. a) What are the different types of Sampling gates. 6M

b) Explain how a compensation circuit improves the linearity of a Bootstrap voltage time base generator. 6M

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AR13

CODE: 13CS3008 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
III B.Tech I Semester Supplementary Examinations, January-2019

COMPUTER ORGANIZATION AND ARCHITECTURE
(Electronics and Communication Engineering)

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

PART-A

ANSWER ALL QUESTIONS **[1 x 10 = 10 M]**

1. a) What is fixed point representation
   b) Draw flowchart for add operation
   c) List various Decimal arithmetic operations
   d) Distinguish between single processor and multiprocessor system
   e) Write about Auxiliary memory
   f) Describe priority interrupt
   g) Define asynchronous data transfer
   h) Mention the advantages of RISC over CISC
   i) Briefly explain pipeline processing
   j) Define instruction pipe line

PART-B

Answer one question from each unit **[5x12=60M]**

UNIT-I

2.	a)	Explain binary IEEE standard for floating point numbers	6M
	b)	Explain the fundamental concepts of design methodologies.	6M
		(OR)	
3.	a)	Write in detail the basic operational concepts of a computer.	6M
	b)	Distinguish multi processor and multi computer.	6M
		UNIT-II	
4.	a)	Explain floating point addition and subtraction	6M
	b)	Discuss moving and rounding floating point data	6M
		(OR)	
5.		Explain about floating point arithmetic	12M
		UNIT-III	
6.		Define addressing mode and explain various addressing modes	12M
		(OR)	
7.	a)	Explain shift micro operation with example	6M
	b)	Explain the phases of an instruction cycle	6M
		UNIT-IV	
8.		What is cache memory & explain different mapping process of cache.	12M
		(OR)	
9.	a)	Explain Asynchronous data transfer modes.	6M
	b)	Explain input output processor	6M
		UNIT-V	
10.	a)	Discuss various types of pipeline.	6M
	b)	Explain the process of parallel processing.	6M
		(OR)	
11.	a)	What is meant by interconnection structure? Discuss various types of interconnection Structures.	6M
	b)	List and explain the use of multiprocessors.	6M

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