EVEN SEM LESSSON PLAN (SEM4, SEM6)

Faculty Name: Deepika Panda

Sem: 6

Subject: CONTROL SYSTEM AND COMPONENT (TH2)

Academic Year: 2023-24

Duration: 2nd Jan 2024 to 23rd April 2024

	CONTROL SYS	TEM AND COMPONENT (TH2) - 6TH SEMESTER ETC
Week	No of Periods Alloted (60)	Syllabus To be Covered
	1.Fundamental of Control	System - 5P
	1st	1.1 Classification of Control system
1ST	2nd	1.2 Open loop system & Closed loop system and its comparison
	3rd	1.3 Effects of Feed back
	4th	1.4 Standard test Signals(Step, Ramp, Parabolic, Impulse Functions)
	1st	1.5 Servomechanism
	2. Transfer Functions - 8P	
2ND	2nd	2.1 Transfer Function of a system & Impulse response,
	3rd	2.2 Properties, Advantages & Disadvantages of Transfer Function
	4th	2.3 Poles & Zeroes of transfer Function
	1st	2.4 Poles & Zeroes of transfer Function
3RD	2nd	2.5 Representation of poles & Zero on the s-plane
סאט	3rd	2.6 Simple problems of transfer function of network
	4th	2.6 Simple problems of transfer function of network
	1st	2.6 Simple problems of transfer function of network
4TH	3. Control system Compone	ents & mathematical modelling of physical System - 5P
7111	2nd	3.1 Components of Control System
	3rd	3.2 Potentiometer, Synchros, Diode modulator & demodulator
	4th	3.2 Potentiometer, Synchros, Diode modulator & demodulator
	1st	3.3 DC motors, AC Servomotors
	2nd	3.4 Modelling of Electrical Systems(R, L, C, Analogous systems)
5TH	4. Block Diagram & Signal F	,
	3rd	4.1 Definition of Basic Elements of a Block Diagram
	4th	4.2 Canonical Form of Closed loop Systems
		4.3 Rules for Block diagram Reduction
	1st	4.4 Procedure for of Reduction of Block Diagram
6TH	2nd	4.5 Simple Problem for equivalent transfer function
	3rd	4.6 Basic Definition in SFG & properties
	4th	4.7 Mason's Gain formula
	1st	4.8 Steps foe solving Signal flow Graph
	2nd	4.9 Simple problems in Signal flow graph for network
7TH	5. Time Domain Analysis of	,
		5.1 Definition of Time, Stability, steady-state response, accuracy, transient
	3rd	accuracy, In-sensitivity and robustness.
	4th	5.2 System Time Response
	1st	5.3 Analysis of Steady State Error
	2nd	5.4 Types of Input & Steady state Error(Step ,Ramp, Parabolic)
8TH	3rd	5.5 Parameters of first order system & second-order systems

4th time,Setting time,Peak over shoot) 1st time,Setting time,Peak over shoot) 5.6 Derivation of time response Specification (Delay time, Rise time, Peak time, Setting time,Peak over shoot) 5.6 Derivation of time response Specification (Delay time, Rise time, Peak time, Setting time,Peak over shoot) 6. PeedbackCharacteristics of Control Systems - 6P 3rd 6.1 Effect of parameter variation in Open loop System & Closed loop Systems 6.1 Effect of parameter variation in Open loop System & Closed loop Systems 6.2 Introduction to Basic control Action & Basic modes of feedback control: proportional, integral and derivative 1st 6.3 Effect of feedback on overall gain, Stability 2nd 6.3 Effect of feedback on overall gain, Stability 3nd 6.4 Realisation of Controllers (P, PI,PD,PID) with OPAMP 4th 6.4 Realisation of Controllers (P, PI,PD,PID) with OPAMP 7. Stability concept& Root locus Method - 8P 1st 7.1 Effect of location of poles on stability 1st 7.3 RouthHurwitz stability criterion. 3rd 7.3 RouthHurwitz stability criterion. 4th 7.3 RouthHurwitz stability criterion. 4th 7.3 RouthHurwitz stability criterion. 1st 7.4 Steps for Root locus method of design(Simple problem) 3rd 7.5 Root locus method of design(Simple problem) 3rd 7.5 Root locus method of design(Simple problem) 4th 7.5 Root locus method of design(Simple problem) 3rd 8.1 Frequencyresponse, Relationship between time & frequency response 3rd 8.3 Polar plots & steps for polar plot 4th 8.4 Bodes plot & steps for Bode plots 1st 8.5 Stability in frequency domain, Gain Margin& Phase margin 2nd 8.6 Nyquist plots. Nyquiststability criterion. 3rd 8.7 Simple problems as above 9. State variable Analysis - 5P 4th 9.1 Concepts of state, state variable, state model, 9.2 state modelsfor linear continuous time functions(Simple) 4th 9.2 state modelsfor linear continuous time functions(Simple) 4th 9.2 state modelsfor linear continuous time functions(Simple) 4th 9.2 state modelsfor linear continuous time functions(Simple)			
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Faculty Name: Deepika Panda

Sem: 4

Subject: Data Communication and Computer Network(Th2)

Academic Year: 2023-24

Duration: 2nd Jan 2024 to 23rd April 2024

S.No	Topic	Contents To be covered:	Recourse	Class No in the week	Week
		Unit-1: Network& Protoco	l (8P)	1	1
1	1.1 Data Communication	 Introduction Components of Communication Data Representation 	1.Lecture Note 2.CCNA Module 1	1	
2	1.2 Networks	Network Criteria:	1.Lecture Note 2.CCNA Module 1	2	
3	1.2 Networks	Types of Networks: • LAN • MAN • WAN • PAN	1.Lecture Note 2.CCNA Module 1	3	1 ST
4	1.3 OSI layer model(Applicati on, Presentation Session layer)	 Define: Protocol Standards Explain the necessity of Layered Tasks at sender and receiver Inro to OSI model Application and Session layer working 	1.Lecture Note 2.CCNA Module 1 3. Animation: https://www.y outube.com/w atch?v=- 6Uoku-M6oY	4	
5	1.3 OSI layer model(Transport , Network layer)	Functionality of: Transport layer Network layer	1.Lecture Note 2.CCNA Module 1	1	
6	1.3 OSI layer model(Datalink, Physical layer)	Functionality of: • Datalink layer • Physical layer	1.Lecture Note 2.CCNA Module 1	2	2 ND
7	1.3 TCP/IP	 Intro to TCP/IP Comparison between TCP/IP and OSI architecture 	1.Lecture Note 2.CCNA Module 1	3	
8	1.3 Protocol & Architecture, Standards	 Protocol & Architecture, Standards Recap of 1st chapter 	1.Lecture Note 2.CCNA Module 1	4	
		Unit-7: TCP/IP (8P)			
9	7.1 TCP/IP Protocol Suite	In detail explanation of different layers of TCP/IP architecture	1.Lecture Note	1	
10	7.2 Basic Protocol functions	Explain the protocols of Application layer: HTTP,HTTPS,DNS,Telnet,SSH,FTP etc	1.Lecture Note	2	
11	7.2 Basic Protocol	Expain the protocols of Transport layer:	1.Lecture Note 2.animation:	3	

	functions	• TCP	https://www.y		
	runctions	UDPTCP vs UDP	outube.com/w atch?v=A3zId8j OfV4 3. CCNA Module 1		3 RD
12	7.4 Internet Protocol operations	 Expain the prototcols of Internet layer: IPv4: Classification and exapin different classes of IPv4 	1.Lecture Note 2. Nptel: https://www.y outube.com/w atch?v=5vbPS- Knhvl 3. CCNA Module 1	4	
13	7.4 Internet Protocol operations	Classess addressingSubnet Mask	1.Lecture Note 3. CCNA Module 1	1	
14	7.3 Internet Protocol operations	IPv4 header	1.Lecture Note	2	
15	7.4 Internet Protocol	Explain the prototcols of Internet layer: • IPv6 representation • Ipv6 header and applications • IPv4 vs Ipv6	1.Lecture Note 2. CCNA Module 1	3	4 TH
16	7.3 Principles of Internetworking	 Extranet Intranet Internet Revision of entire chapter 	1.Lecture Note 2. video link: https://www.y outube.com/w atch?v=YMP5- Zynuw4 2. CCNA Module 1	4	
	UNIT	- 2. DATA TRANSMISSION &	MEDIA (8P)		
17	2.1 Data transmission Concepts and Terminology	 Modes of transmission: Simplex, Half Duplex, Full Duplex Types of Connection: Point-to- Point, Multipoint 	1.Lecture Note 2. animation: https://www.y outube.com/w atch?v=LMRSS 7ZYM50	1	
18	2.1 Data transmission Concepts and Terminology	Breif explanation on:	1.Lecture Note	2	5 TH
19	2.2 Analog and Digital Data transmission	Analog SignalDigital SignalAnalog Transmission	1.Lecture Note	3	
20	2.2 Analog and Digital Data transmission	Digital TransmissionComparison between Analog and Digital Transmission	1.Lecture Note 2. Video: https://www.y outube.com/w	4	

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2.3 Transmission impairments, Channel capacity 2.3 Transmission impairments, Channel capacity 2.4 Transmission media, Guided Transmission media, Guided Transmission media, Guided Transmission wireless Transmission, Wireless Transmission 2.4 Transmission, Wireless Transmission, Define: 2.5 3.1 Data encoding, 2.6 3.2 Digital data digital signals 2.7 3.2 Digital data digital signals 2.8 3.3 Digital data analog signals 2.9 3.3 Digital data analog signals 2.9 3.3 Digital data analog signals 2.9 5.1 Define: 2.0 Transmission 2.0 Transmission 2.1 Lecture Note 3.1 Lecture Note 4.2 Lecture Note 1.1 Lecture Note 1.2 Lecture Note 2.4 Transmission 3.7 Lecture Note 4.2 Lecture Note 1.1 Lecture Note 2.4 Lecture Note 2.5 Lecture Note 3.6 Lecture Note 4.7 Lecture Note 4.7 Lecture Note 4.7 Lecture Note 5. Lecture Note 6. Digital Analog conversion 7. Lecture Note 8. Lecture Note 9. Lecture Note 1. Lec			-			
2.3 Transmission impairments, Channel capacity Channel capacity Channel capacity 2.3 Transmission impairments, Channel capacity formula 2.4 Transmission media, Guided Transmission Transmission media, Guided Transmission media, Guided Transmission media, Guided Transmission Transmission Transmission 2.4 Transmission media, Guided Transmission media, Guided Transmission Transmission Transmission Transmission Mireless Transmission 2.5 Sa.1 Data encoding, Define: 2.6 Sa.2 Digital data digital signals 2.7 Sa.2 Digital data digital signals 2.8 Sa.3 Digital data analog signals 2.9 Sa.3 Digital data analog signals 2.9 Sa.3 Digital data analog signals 2.9 Sa.3 Digital data analog signals 2.0 Channel Capacity Shannon channel capacity formula 2.0 Cox4 2.1 Lecture Note Sa.2 Civideo: https://www.youtube.com/watch?v=rlsqub. Ask 2.0 Explain the guided media Sa.2 Civideo: https://www.youtube.com/watch?v=rlsqub. Ask 2.0 Define: 2.1 Excture Note Sa.2 Digital data digital signal encoding 3.2 Digital data digital signals 2.0 Define: 2.1 Excture Note Sa.2 Digital data digital signal encoding 3.2 Digital data digital signal encoding 4. Digital Analog conversion 5. Digital Analog conversion 6. Digital Analog conversion 7. Lecture Note Sa.2 Digital data analog signals 8. Digital data analog signals 8. Digital data analog signals 9. Polar NRZ encoding 1. Lecture Note Sa.2 Digital data analog signals 9. Digital Analog conversion 1. Lecture Note Sa.2 Digital data analog signals 9. Polar NRZ encoding 1. Lecture Note Sa.2 Digital data analog signals 1. Lecture Note Sa.2 Digital data analog signals 1. Lecture Note Sa.2 Digital data digital signal encoding 1. Lecture Note Sa.2 Digital data digital signal encoding 1. Lecture Note Sa.2 Digital data digital signal encoding 1. Lecture Note Sa.2 Digital data digital signal encoding 1. Lecture Note Sa.2 Digital data digital sig						
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22 2.3 Transmission impairments, Channel capacity Shannon channel capacit		Channel capacity	Closstaik			
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26 3.2 Digital data digital signals • Different techniques used for Digiatal data digital signal encoding • Unipolar encoding • Polar:NRZ encoding • Manchester encoding • Manchester encoding • Digital Analog conversion • ASK 28 3.3 Digital data analog signals • FSK • PSK 29 3.3 Digital data analog signals • Different techniques used for Digital signal encoding • Unipolar encoding • Digital Signal • RZ encoding • Manchester encoding • Digital Analog conversion • ASK • PSK • PSK • PSK • PSK • PSK • OTH	25	chedding,				
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		Pulse code modulation and its block diagram	1.Lecture Note 2. video:	2	
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30	3.4 Analog data		outube.com/w		
	digital signals		atch?v=mHvV_		
			Tv8HDQ		
		Analog data anlog signal	1.Lecture Note	3	_
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	3.5 Analog data		https://www.y		
31	analog signals		outube.com/w		
			atch?v=mHvV_ Tv8HDQ		
			TVOTIDO		
		• FM	1.Lecture Note	4	
		• PM	2. video:		
32	3.5 Analog data		https://www.y outube.com/w		
52	analog signals		atch?v=mHvV		
			Tv8HDQ		
	Unit-4. D	ata Communication & Data	link control ((8P)	
	4.1	Asynchronous Transmission	1.Lecture Note	1	
33	Asynchronous and	Synchronous Transmission			
33	Synchronous				
	Transmission				
	4.2 Error	Parit check	1.Lecture Note	2	9 TH
34	Detection	 Checksum 			
		Cyclic redundancy check			
35	4.3 Line configuration	Point to point configurationMultipoint configuration	1.Lecture Note	3	
		Stop and wait protocol	1.Lecture Note	4	
36	4.4 Flow Control	Sliding widnow protocol			
		Single bit error vs burst error	1.Lecture Note	1	
		Stop and wait arq	Video:		
37	4.5 Error Control	Go back n Salastiva raiset	https://www.y		
3/	7.5 LITOI COILLOI	Selective reject	atch?v=kSgtZnf		
			fCog		10 TH
38	4.6 Multiplaying	Reasons for multiplexing Type of multiplexing		2	
36	4.6 Multiplexing	Typs of multiplexingAdvantages			
		• FDM	1.Lecture Note	3	
		• TDM(Synchronous)	2.video:		
			https://www.y		
	4.7 FDM		outube.com/w		
39	synchronous		atch?v=f52bwN buMDA		
	TDM		3.video:		
			https://www.y		
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			<u>SP_I</u>		
40	4.8 Statistical	Statistical TDM	1.Lecture Note	4	
	TOW	Unit-6: LAN Technology (10P)		
41	6.1. Topology	 Define topology Explain different types of topology(Contd) 	1.Lecture Note 2. CCNA Module 1 3. video: https://www.y outube.com/w atch?v=zbqrNg 4C98U	1	11 [™]
42	6.1 Topology	Explain different types of topology	1.Lecture Note	2	
43	6.2 LAN protocol architecture	Features of LANLogic link layer	1.Lecture Note	3	
44	6.3. Medium Access control	 Channel allocation and types Pure Aloha Slotted Aloha 	1.Lecture Note 2. video: https://www.y outube.com/w atch?v=j4- r0e7DjqY	4	
45	6.3. Medium Access control	CSMA/CDCSMA/CA	1.Lecture Note 2. Video: https://www.y outube.com/w atch?v=KDHbP 81SAmA	1	12 TH
46	6.4 Bridges, Hub, Switch	RepeaterHub	1.Lecture Note 2. animation: https://www.y outube.com/w atch?v=1z0ULv g_pW8	2	
47	6.4 Bridges, Hub, Switch	SwitchRouterGateway	1.Lecture Note 2. animation: https://www.y outube.com/w atch?v=1z0ULv g_pW8	3	
48	6.5 Ethernet (CSMA/CD)	Explain the concept of Ethernet	1.Lecture Note 2. video: https://www.y outube.com/w atch?v=i2qiNA VfQRw	4	
49	6.5 Fiber Channel	Explain the fiber channel	1.Lecture Note	1	13 TH
50	6.6 Wireless LAN	Wireless LAN Technology	1.Lecture Note	2	

Unit-5: Switching & Routing (10P) • Concept of Routing and switching • Circuit switching • Advantages and disadvantages networks • Packet switching • Advantages and disadvantages 5.2 Packet Switching principles • Packet switching • Advantages and disadvantages • Differences between circuit and packet switching 1.Lecture Note 2. Video: https://www.youtube.com/watch?v=-HIJ4psu5aU&t= 77s 1.Lecture Note 2. https://www.youtube.com/watch?v=-HIJ4psu5aU&t= 77s X.25 X.25 X.25 1.Lecture Note 2. nptel: https://www.youtube.com/watch?v=-HIJ4psu5aU&t= 2. nptel: https://www.youtube.com/watch?v=DU7IZ MciHJE		Tochnology		2.video:		
Unit-5: Switching & Routing (10P) - Concept of Routing and switching - Circuit switching - Circuit switching - Advantages and disadvantages - Advantages and disadvantages - Differences between circuit and packet switching - Differences between circuit and pack		recnnology				
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