Hall Ti	icket Number :										Г	
Code:	Code: 4GA51											
	III B.Tech. I Se		-									016
	Manage								And	alysi	İS	
	(Common to CE, ME and ECE) Max. Marks: 70 Time: 3 Hours											
Answer	all five units by c	choosi	ng one	ques *****		from	n ea	ch u	nit (5 x 1	4 =	70 Marks)
					UNI	T–I						
1.	Define Manager	ial Ecc	nomics	? Exp	lain i	ts Na	ature	and	Sco	pe?		
					0	R						
2.	What is Law of [Deman	d? Expla	ain its	ass	umpt	ions	and	exce	eptior	ns?	
					UNI	T—II						
3.	Explain Product	ion fun	ction wit	h sing	gle va	ariab	le?					
					0	R						
4.	What is Break	k-even	analys	is?	Discu	lss	its	obje	ctive	es, a	Issur	mptions and
	importance?											
					UNI	[_]]]						
5.	Elaborate Price	output	determi	natior			ct co	mpet	tition	marl	ket.	
		-			0	R		-				
6.	Explain various	public	sector b	usine	ss or	gani	zatio	ns w	rith s	uitab	le ex	amples?
					UNIT	T–IV						
7.	What is Capital?	P Expla	in variou	IS SOI	urces	of ra	aisin	g cap	oital?	?		
					0	R						
8.	Distinguish betw	-	ayback	peric	od m	etho	d an	d ac	cour	nting	rate	of return in
	capital budgeting	g?										
					1 1	F \/						
0	M/batic lournal		in ito im	norte				aanir		200112	otina	evetor 2
9	What is Journal'	: ⊏xpia	un its im	μοπα	nce i O		UK-K(eepir	iy at	Juour	ung	รุงรเษกา <i>ร</i>
					U	r.						

10 Discuss various liquidity ratios in financial analysis?

O							R-14
Hall Ticket Number :						, r	

Code: 4G351

III B.Tech. I Semester Regular Examinations November 2016

Control Systems

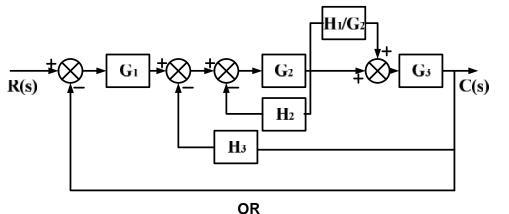
(Electronics and Communication Engineering)

Max. Marks: 70

Answer all five units by choosing one question from each unit ($5 \times 14 = 70$ Marks)



- 1. a) Write a short note on comparison between open loop and closed loop system with necessary examples?
 - b) Simplify the block diagram shown in figure and obtain the closed loop transfer function?



7M

7M

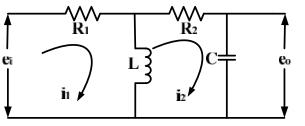
7M

7M

7M

Time: 3 Hours

2. a) Obtain transfer function (Eo(s)/Ei(s)) for electrical network shown below?



b) Discuss about effect of feedback on system gain, stability, noise and sensitivity? 7M

UNIT–II

3. a) Draw the root-locus for the open loop transfer function with unity feedback system, $G(s) = \frac{K}{s(s+1)(s+2)}?$

b) Obtain the response of the first order system by using step, ramp and impulse signals?

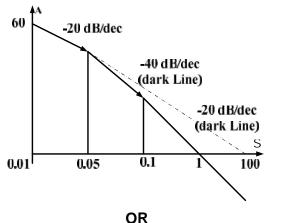
OR

- 4. a) Define delay time, rise time, peak time, maximum peak overshoot and settling time with significant expressions?7M
 - b) For a closed loop transfer function given by

 $\frac{C(s)}{G(s)} = \frac{2600k(s+25)}{s^4 + 125s^3 + 5100s^2 + 65000s + 65000k}$. Find the imaginary axis intercepts of root locus?

UNIT-III

- Write a short note on Nyquist stability criterion and procedure to construct nyquist plot? 7M 5. a)
 - b) Obtain the transfer function for the Bode magnitude plot shown below?



- List the steps involved to construct bode plot and how the stability is obtained from 6. a) bode plot?
 - b) A unity feedback system has open loop transfer function $G(s) = \frac{1}{s(s+2)(s+4)}$. Find its gain margin?

UNIT-IV

Consider a unity feedback system whose feed forward transfer function is given by 7. $G(s) = \frac{1}{s^2}$. It is desired to insert a series compensator so that the open loop frequency response curve is tangent to the M=-3 db circle at S=3 rad/sec. The system is subjected to high frequency noises and sharp cut-off is desired. Design appropriate series compensator?

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- 8. a) Explain procedure for design of PID controller?
 - Explain clearly about frequency domain interpretation of phase lead control? b) 7M

UNIT-V

- Define State, State Variable, State vector and state element? 9. a)
 - Obtain state transfer matrix of the system defines by b)

$$\begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} = \begin{bmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \\ -2 & -4 & -6 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} + \begin{bmatrix} 00 \\ 01 \\ u_2 \end{bmatrix} and \begin{bmatrix} y_1 \\ y_2 \end{bmatrix} = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix}$$
7M
OR

10. a) A state space representation for the transfer function
$$\frac{y(s)}{u(s)} = \frac{s+6}{s^2+5s+6}$$
 is

$$\overline{x} = Ax + Bu, y = cx$$
 where $A = \begin{bmatrix} 0 & 1 \\ -6 & -5 \end{bmatrix}, B = \begin{bmatrix} 0 \\ 1 \end{bmatrix}$. Find out elements of matrix C? 7M

b) Define the terms Controllability and observability and write necessary conditions for verification of controllability and observability? 7M

7M

7M

7M

14M

7M

7M

Hall T Code:	: 4 G	B.Tech. I Semester Regular Examinations November 2016	
Max. Answe	-	five units by choosing one question from each unit ($5 \times 14 = 70$ Marks)	rs
1.	a)	UNIT–I Derive the expression of CMRR for dual input balanced output differential amplifier.	8M
1.	a) b)	Write short notes on	OIVI
	0)	i) level translator	
		i) cascaded differential amplifier stages	6M
		OR	
2.	a)	Explain in detail about block diagram of op-amp	7M
	b)	Explain in detail about op amp open loop configurations. UNIT-II	7M
3.	a)	What is an instrumentation amplifier and derive the expression for output voltage of three op amp instrumentation amplifier.	8M
	b)	Draw and explain the voltage to current converter with floating load and grounded load	6M
		OR	
4.	a)	Draw and explain the operation of triangular wave generator.	7M
	b)	Draw the circuit diagram of log amplifier with two op amp and explain its operation. UNIT-III	7M
5.	a)	Design an astable multivibrator by using 555 timer with 50% of duty cycle.	7M
	b)	List and explain the applications of monostable multivibrator using 555 timer. OR	7M
6.	a)	With neat block diagram explain the working principle of PLL	7M
	b)	Explain IC 566 and derive the expression for frequency of oscillations by using it. UNIT-IV	7M
7.	a)	Explain about R-2R and inverted R-2R DAC techniques.	8M
	b)	Explain the specification of DAC and ADC.	6M
		OR	
8.	a)	Explain in detail about the operation of dual slope ADC.	7M
	b)	Explain the operation of successive approximation converter.	7M
9.	a)	Explain about the operation of IC 723	8M
	b)	List the characteristics of three terminal IC regulators.	6M
		OR	
10	a)	Derive the expression for the transfer function of second order high pass Butter-worth filter.	8M
	b)	Design a second order Butter-worth filter low pass filter with cut off frequency of 1kHz	6M

Hall Tick	et Number :	
Code: 4G	353	R-14
	III B.Tech. I Semester Regular Examinations November 201 Digital IC Applications	6
Max. Ma Answ	(Electronics and Communication Engineering) arks: 70 Fin ver all five units by choosing one question from each unit (5 x 14 = 70 / *********	e: 3 Hours Marks)
	UNIT-I	
1. a)	Draw 2-input CMOS Nand gate and explain	7M
b)	Draw the CMOS circuit for (AB + CD) ^I	7M
2.	Explain in detail about dynamic electrical behaviour of CMOS	14M
	UNIT–II	
3.	Explain structural design elements of VHDL with an example program OR	14M
4.	Discuss data objects , Functions and procedures of VHDL	14M
	UNIT–III	
5.	Discuss with an example behavioral design elements of VHDL OR	14M
6.	Explain with syntax of wait, loop, exit, if and case statements	14M
	UNIT–IV	
7.	Draw IC of parity circuit and write its VHDL program OR	14M
8. a)	Write VHDL program of One's counter	7M
b)	Draw and write VHDL code for 8x1 Mux	7M
	UNIT–V	
9.	Draw and explain four bit Universal shift register	14M
	OR	
10.	Draw and explain four bit up/down counter ***	14M

 b) Explain the terms with expressions Radiation power density Radiation intensity OR Show that the radiation resistance of Half Wave Dipole is 73 . An antenna has R=73 , R_=2 . Compute its efficiency. UNIT-II a) Develop the radiation pattern for 2-isotropic point sources fed with equal amplitude and in-phase quadrature excitation. Define uniform linear array and derive the expression for array factor of n-element linear array. OR Calculate the directions of the maxima and nulls of the array factor of an array of two infinitesimal dipoles oriented along the Z-direction, kept at Z₁ = -0.125 and Z₂ = 0.125 and carrying currents I₁ = exp(-j /4) and I₂ = exp(+j /4) respectively. Explain the operation of Binomial arrays. UNIT-III 5. a) Sketch and explain the constructional features of a helical antenna. GR Find the directivity of a 460-mm circular parabolic dish at 12.5 GHz assuming an aperture efficiency of 75 percent. Memorize corner reflector antennas. Memorize corner reflector antennas. Memorize corner reflector antennas. Met are the conditions under which the wave travels in the ground wave mode? List out various applications of the ground wave according to Sommer field? What are the factors that are incorporated into this formula? Mut is the field strength due to ground wave according to Sommer field? What are the factors that are incorporated into this formula? Mut is the field strength due to ground wave according to Sommer field? What are the measures that can be taken? MIT-V 9. Describe the phenomenon of 'ghosting' and 'shadow zone'? What are the preventive measures that can be taken? OR Explain the relation between launching angle, ionization density and frequency in the sky 		Ha	Ill Ticket Number :	
III B.Tech. I Semester Regular Examinations November 2016 Anternas and Wave Propagation (Electronics and Communication Engineering) Max. Marks: 70 Time: 3 Hours Answer all five units by choosing one question from each unit (5 x 14 = 70 Marks) Immediation resistance. Show that the directivity for unidirectional operation is 2(n+1) for an intensity variation of U = U_COS ² . Immediation resistance. Show that the directivity for unidirectional operation is 2(n+1) for an intensity variation of U = U_COS ² . Immediation resistance. Show that the directivity for unidirectional operation is 2(n+1) for an intensity variation of U = U_COS ² . Immediation resistance of Half Wave Dipole is 73 . Immediation resistance of Half Wave Dipole is 73 . Immediation resistance of Half Wave Dipole is 73 . Immediation resistance of Half Wave Dipole is 73 . Immediation pattern for 2-Isotropic point sources fed with equal amplitude and in-phase quadrature excitation. Immediation pattern for 2-Isotropic point sources fed with equal amplitude and in-phase quadrature excitation. Immediation pattern for 2-Isotropic point sources fed with equal amplitude and in-phase quadrature excitation. Immediation pattern for 2-Isotropic point sources fed with equal amplitude and in-phase quadrature excitation.	L	Cod	de: 4G354 R-14	
Answer all five units by choosing one question from each unit (5 x 14 = 70 Marks)			III B.Tech. I Semester Regular Examinations November 2016 Antennas and Wave Propagation (Electronics and Communication Engineering)	
 a) Generate the relation between the effective height and radiation resistance. Show that the directivity for unidirectional operation is 2(n+1) for an intensity variation of U = U_mCOS⁵. b) Explain the terms with expressions I. Radiation power density II. Radiation power density II. Radiation resistance of Half Wave Dipole is 73. B) An antenna has R_i=73., R_L=2. Compute its efficiency. An antenna has R_i=73., R_L=2. Compute its efficiency. Develop the radiation pattern for 2-isotropic point sources fed with equal amplitude and in-phase quadrature excitation. Define uniform linear array and derive the expression for array factor of an array of two infinitesimal dipoles oriented along the 2-direction, kept at Z₁ = -0.125 and Z₂ =0.125 and Z₂ =0.			wer all five units by choosing one question from each unit (5 x 14 = 70 Marks)	
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wave propagation. 14).		Explain the relation between launching angle, ionization density and frequency in the sky wave propagation.	14N

Hall Ti	cket Number :	
Code:	4G455 R-14	
	III B.Tech. I Semester Regular Examinations November 2016	
	Computer System Architecture	
	(Electronics and Communication Engineering)	
	Time: 3 Ho nswer all five units by choosing one question from each unit (5 x 14 = 70 Marks)	Urs
	UNIT–I	
1. a)		
	(a) $(67.24)_{8} = ?_{2}$ (b) $10100.1101_{2} = ?_{16}$ (c) F3A5 $_{16} = ?_{2}$	4014
F.)	(d) $101111.0111_2 = ?_8$ (e) $15C.38_{16} = ?_2$	10M
b)	Write about basic operational concepts of Computer systems	4M
	OR	41.4
2. a)	List pros and cons of integer representations	4M
b)	Discuss various complements and data types with an example	10M
3. a)	UNIT-II Discuss in detail various miero aparationa	8M
,	Discuss in detail various micro operations	6M
b)	Write about Bus and memory transfer OR	OIVI
1 0)	-	10M
4. a)	Design one stage of arithmetic logic shift unit and show the function table	
b)	List various types of computer instructions and give example to each category	4M
5. a)	UNIT-III Interpret the binary division to an example -7/-3	8M
5. a) b)	Distinguish between floating point addition and subtraction with example	6M
0)		OIVI
6. a)	Assuming the following address and register contents, determine all possible	
0. uj	ways to put the value 8 into register R0, assuming instructions of the form MOV	
	R0, for each way, describe type of addressing mode you are using	
	Address Register	
	Location 1 2 3 4 5 1 2 3 4 5	
	Content 6 5 4 2 8 2 3 4 5 0	7M
b)	Explain about Control Memory in Micro programmed control unit in detail with diagram	7M
	UNIT-IV	
7. a)	Explain Direct Associative, Set Associative and Fully Associative mapping with	
	an example in cache memories	9M
b)	Explain about virtual memory with example	5M
	OR	
8. a)	List Various I/O techniques and explain any one in detail	8M
b)	Distinguish between vectored interrupts and non-vectored interrupts	6M
	UNIT–V	
9. a)	Discuss in detail RISC pipeline vector processing	8M
b)	Distinguish between instruction pipelining and arithmetic pipeline	6M
	OR	
10. a)	An un pipelined processor has a cycle time of 25ns. What is the cycle time of a	
	pipelined version of the processor with 5 evenly divided pipeline stages, if each	6M
۲	pipeline latch has a latency of 1ns? Discuss Flynn classification for Multiple Processor Organizations.	8M
b)		OIVI