CBCS SCHEME

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North Park	week.	0.00			BESCK104C/BESCKC104
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First Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024 Introduction to Electronics and Communication

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M: Marks, L: Bloom's level, C: Course outcomes.

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		Module – 1	M	L	C
Q.1	a.	What is Regulated power supply? With neat block diagram, explain the individual blocks.	8	L2	CO1
	b.	What is a rectifier? With neat circuit diagram and output waveforms, explain full wave bridge rectifier with capacitor filter.	8	L2	CO1
	c.	With circuit diagram brief out the operation of voltage doubler.	4	L2	CO1
		OR			
Q.2	a.	Draw the circuit diagram of voltage regulator and explain the operation.	7	L2	CO1
	b.	Explain the concept of negative feedback amplifier with relevant equations and diagrams.	5	L2	CO1
	c.	Explain Frequency response of RC coupled amplifier.	8	L2	CO1
		Module – 2	*		
Q.3	a.	Explain the Barkhausen criteria for oscillations. In wein bridge oscillator if $C_1 = C_2 = 200 \mathrm{nF}$ determine the frequency of oscillation when $R_1 = R_2 = 4k\Omega$.	7	L3	CO2
-	b.	With neat circuit diagram, explain the operation of ladder network oscillator.	7	L2	CO2
	c.	Explain the operation of single stage Astable multivibrator with its circuit diagram.	6	L2	CO2
		OR		2011	
Q.4	a.	List out the Ideal characteristics of an op-amp.	7	L2	CO2
	b,	Explain the following with respect to operational amplifier, i) Inverting amplifier ii) Integrator.	8	L2	CO2
	c.	An operational amplifier operating with negative feedback produces an output voltage of 2V when supplied with an input of $400\mu V$. Determine the value of closed – loop voltage gain and express the answer in decibels.	5	L3	CO2
		Module – 3			
Q.5	a.	Convert the following: i) $(FACE)_{16} = ()_{10}$ ii) $(65.45)_{10} = ()_2$ iii) $(1111011011011.11011)_2 = ()_8$ iv) $(2604.10546875)_{10} = ()_{16}$	8	L3	CO3
		1 of 2			

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			6	L3	CO3
b	. F	Perform the following: i) $(1010100)_2 - (1000100)_2$ using 2's compliment. ii) $(4456)_{10} - (34324)_{10}$ using 10's compliment method.	0		
		State and prove De – Morgan's theorems with its truth table.	6	L2	CO3
C		State and prove De – Worgan's theorems was			
		OR		T 0	GO2
		Implement the Boolean functions using logic gates.	6	L3	CO3
2.6		i) $F_1 = x + y'z$ ii) $x'y'z + x'yz + xy'$			604
	b.	Write the step by step procedure to design a combinational circuit.	6	L2	CO3
		Implement full adder circuit with its truth table and draw the logic diagram of sum and carry.	8	L3	CO3
		of sum and carry.			
		Module – 4	7	L2	CO4
Q.7	a.	What is an embedded system? Compare embedded system and General computing systems.	7	LZ	04
			7	L2	CO4
	b.	Explain classification of embedded systems.			
		What is the difference between RISC and CISC processors?	6	L2	CO4
	c.	What is the difference seems			
		OR	7	L2	CO4
0.0	0	Discuss major application areas of embedded systems with examples.	7	LZ	CO4
Q.8	a.	Discuss major app	6	L2	CO4
	b.	Write short note on: i) Transducers ii) Sensors iii) Actuators.			
	c.	Write a short note on 7-segment LED display.	7	L2	CO4
		Module – 5			
		With neat block diagram, explain modern communication system.	8	L	2 CO5
Q.9	a.				
	-	Write a note on Hard wired channel and soft wired channel.	6	L	2 COS
	b.				0 000
	c.	Explain with a neat diagram, the concept of Radio wave propagation and it	s 6	L	2 CO
		different types.		0:1	
	die				
		OR Service (ANO and Fraguency Modulation (FM) [8 L	2 CO
Q.10	a	Explain Amplitude Modulation (AM) and Frequency Modulation (FM with neat waveforms.			
	b	List out the advantages of Digital communication over Analo	g	6 I	2 CO
		communication.			
	0	Explain different multiple Access Techniques.		6 I	2 CO

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