ODGG GOMENIE

Г	BESCK104C/BESCKC104

First Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024 Introduction to Electronics and Communication

Time: 3 hrs.

Max. Marks: 100

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

individual blocks. Module – 3 What is a rectifier? With neal circuit diagram and output waveforms, explain full wave bridge realifor with capacitor filter. With circuit diagram brief out the operation of voltage doubler. Q.2 a. Draw the circuit diagram of voltage regulator and explain the operation. Explain the concept of negative feedback amplifier with relevant equations and diagrams. c. Explain Frequency response of RC coupled amplifier. Module – 2 Q.3 a. Explain the Barkhausen criteria for oscillations in wein bridge oscillation when R ₁ = R ₂ = 4kΩ. Mith neat circuit diagram, explain the operation of ladder notwork oscillator. c. Explain the operation of single stage Astable multivibrator with its circuit diagram. OR Q.4 b. List out the Ideal characteristics of an op-amp.) Explain the following with respect to operational amplifier, i) Inverting amplifier ii) Integrator. An operational amplifier operating with negative feedback produces an output voltage of 2V whom supplied with an input of 400μV. Determine the value of closed – loop voltage gain and express the answer in decibols. Module – 3						
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Module - 2 Explain the Barkhausen oritoria for oscillations. In wein bridge oscillation if 7 L3 CO2 C1 = C2 = 200nF determine the frequency of oscillation when R1 = R2 = 4kΩ. With neat circuit diagram, explain the operation of ladder notwork 7 L2 CO2 c2 C2 C3 C4 C4 C5 C5 C5 C5 C5 C5	•	JY.		5	L2	COI
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Q.4 List out the Ideal characteristics of an op-amp. D. Explain the following with respect to operational amplifier, i) Inverting amplifier ii) Integrator. C. An operational amplifier operating with negative feedback produces an output voltage of 2V when supplied with an input of 400µV. Determine the value of closed – loop voltage gain and express the answer in decibels. Module – 3 Q.5 M. Convert the following: i) (FACE) ₁₆ = () ₁₀ ii) (65.45) ₁₀ = () ₂ iii) (11.110.110.100.115 1.011)	•	K.	With neat of out diagram, explain the operation of hidder notwork oscillator.	7	L2	CO2
Q.4 List out the Ideal characteristics of an op-amp.) 6. Explain the following with respect to operational amplifier, i) Inverting amplifier ii) Integrator. 7. L2 COS 8. L2 COS An operational amplifier operating with negative feedback produces an output voltage of 2V when supplied with an input of 400µV. Determine the value of closed – loop voltage gain and express the answer in decibels. 7. L2 COS 8. L3 COS Module – 3 Q.5 M. Convert the following: i) (FACE) ₁₆ = () ₁₀ ii) (65.45) ₁₀ = () ₂ iii) (11.110.110.110.110.110.110.110.110.110.		c.	Explain the operation of single stage Astable multivibrator with its circuit diagram.	6	L2	CO2
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Q.5 A. Convert the following: i) $(FACE)_{16} = \binom{1}{10}$ ii) $(65.45)_{10} = \binom{1}{2}$ iii) $(65.45)_{10} = \binom{1}{2}$		معر	output voltage of 2V whon supplied with an input of 400µV. Determine the value of closed – loop voltage gain and express the answer in decibels.	5	L3	CO2
i) $(FACE)_{16} = ()_{10}$ ii) $(65.45)_{10} = ()_2$						2
	Q.5		i) $(FACE)_{16} = ()_{10}$ ii) $(65.45)_{10} = ()_2$	8	L3	CO3

	4	Perform the following:	6	L3	CO3
1	0.	i) (1010100) ₂ - (1000100) ₂ using 2's compliment.			
		ii) (4456) ₁₀ – (34324) ₁₀ using 10's compliment method.	,		
		ii) (4456) ₁₀ – (34324) ₁₀ using to a comprime in medically			
		1. de seus with its mult joble		1.0	001
	2	State and prove De - Morgan's theorems with its truth-table.	6	L2	CO3
		OR S			_
Q.6		Implement the Boolean functions using logic gates.	6	L3	CO3
	่ ล.	This is the Books to the state of the state			000
		i) $F_1 = x + y'z$ ii) $x'y'z + x'yz + xy'$			
		(PA)			
	b.	Write the step by step procedure to design a combinational circuit.	6	L2	CO ₃
		(7)			
	c.	Implement full adder oircuit with its truth table and draw the logic diagram	8	L3	CO ₃
	C.				003
		of sum and carry.			
		⟨ V > Module - 4			
Q.7	a.	What is an embedded system? Compare embedded system and General	7	L2	CO ₄
	1	computing systems.			
		Compare List By Strong		-	
	1./	E while also "Section of ambadded systems"	7	12	CO4
	Ø.	Explain classification of embedded systems.	,	L2	CO4
	1_	20			
	C	What is the difference between RISC and CISC processors?	6	L2	CO4
		A YOR			
0.0	Ta	Discuss major application areas of embedded systems with examples.	7	L2	CO4
Q.8	a.	Discuss major application areas of embedded systems with examples.	,	LL	CO4
9.5	1				
	b.	Write short note on:	6	L2	CO4
		i) Transducers ii) Sensors iii) Actuators.			
		Control of the contro			
	1	Write a short note on 7-segment LED display	7	1.2	CO4
	c.	Write a short note on 7-segment LED display.	7	L2	CO4
	c.		7	L2	CO4
	c.	Module = 5	7		
Q.9	c.		7	L2	CO4
Q.9		Module = 5			
Q.9	a.	Module = 5 With neat block diagram, explain modern communication system.	8	L2	CO5
Q.9		Module = 5			
Q.9	a.	Module = 5 With neat block diagram, explain modern communication system. Write a nole on Hard wired channel and soft wired channel.	8	L2	CO5
Q.9	a.	Module = 5 With neat block diagram, explain modern communication system. Write anole on Hard wired channel and soft wired channel. Explain with a neat diagram, the concept of Radio wave propagation and its	8	L2	CO5
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Q.9	a.	Module = 5 With neat block diagram, explain modern communication system. Write anole on Hard wired channel and soft wired channel. Explain with a neat diagram, the concept of Radio wave propagation and its	8	L2	CO5
Q.9	a.	Module = 5 With neat block diagram, explain modern communication system. Write anole on Hard wired channel and soft wired channel. Explain with a neat diagram, the concept of Radio wave propagation and its	8	L2	CO5
-	a. b.	Module = 5 With neat block diagram, explain modern communication system. Write anole on Hard wired channel and soft wired channel. Explain with a neat diagram, the concept of Radio wave propagation and its different types. OR	6	L2 L2 L2	CO5 CO5
Q.9 Q.10	a.	Module = 5 With neat block diagram, explain modern communication system. Write a note on Hard wired channel and soft wired channel. Explain with a neat diagram, the concept of Radio wave propagation and its different types. OR Explain Amplitude Modulation (AM) and Frequency Modulation (FM)	8	L2	CO5
-	a. b.	Module = 5 With neat block diagram, explain modern communication system. Write anole on Hard wired channel and soft wired channel. Explain with a neat diagram, the concept of Radio wave propagation and its different types. OR	6	L2 L2 L2	CO5 CO5
-	a. b.	Module = 5 With neat block diagram, explain modern communication system. Write a note on Hard wired channel and soft wired channel. Explain with a neat diagram, the concept of Radio wave propagation and its different types. OR Explain Amplitude Modulation (AM) and Frequency Modulation (FM) with neat waveforms.	6	L2 L2 L2	CO5 CO5
-	a. b.	Module = 5 With neat block diagram, explain modern communication system. Write a note on Hard wired channel and soft wired channel. Explain with a neat diagram, the concept of Radio wave propagation and its different types. OR Explain Amplitude Modulation (AM) and Frequency Modulation (FM)	6	L2 L2 L2	CO5 CO5
-	a. b. cp	Module = 5 With neat block diagram, explain modern communication system. Write a note on Hard wired channel and soft wired channel. Explain with a neat diagram, the concept of Radio wave propagation and its different types. OR Explain Amplitude Modulation (AM) and Frequency Modulation (FM) with neat waveforms. List out the advantages of Digital communication over Analog	8 6 6	L2 L2 L2	CO5 CO5
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-	a. b. co	Module ≠ 5 With neat block diagram, explain modern communication system. Write a note on Hard wired channel and soft wired channel. Explain with a neat diagram, the concept of Radio wave propagation and its different types. OR: Explain Amplitude Modulation (AM) and Frequency Modulation (FM) with neat waveforms. List out the advantages of Digital communication over Analog communication.	8 6 6	L2 L2 L2 L2	CO5 CO5 CO5
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