C. U. SHAH UNIVERSITY Summer Examination-2022

Subject Name : Analog and Digital Electronics

Sut	oject Co	de : 4SC04ADE1	Branch: B.Sc. (Chemistry, Ma	thematics)
Sen	nester:	4 Date: 10/05/2022	Time: 11:00 To 02:00	Marks: 70
Inst	(2) Ins(3) Dr	e of Programmable calculator & any tructions written on main answer be	y other electronic instrument is prohib ook are strictly to be obeyed. s (if necessary) at whenever necessary	
Q-1 Atter	11 12 13 14	Attempt the following questions: Define stabilization and give forr What is CMRR in Op-AMP oper Define pinch-off voltage. Define transconductance of ampl List the name of transistor biasin Define bandwidth of transistor. State applications of thermistor. Draw the diagram for Op Amp w Define slew rate for OPAMP. Convert (4321) ₁₀ into binary num Draw circuit of AND gate using I Write the truth table for NOR gat Give the basic difference between Give Barkhahusen's criterion for	nula of stabilization factor. ration? ifier. g methods. when it is used as an adder ober system. NAND Gates te n Analog and Digital Signal	(14)
Q-2		Attempt all questions		(14)
-	Α		ower amplifiers are preferred over Cla	
	В	Explain Binary Subtraction using 2 suitable example.	2's Complement Method by giving	5
0.2	С	Discuss in detail: Transistor as an a	amplifier in CB configuration.	4
Q-3	A	Attempt all questions Why negative feedback is utilized an amplifier gets modified by nega	in amplifiers? How various parameter ative feedback?	(14) rs of 5
	В	Explain input and output Character	ristics of Common Emitter Amplifier	5
	С	using proper circuit diagram Explain in brief about voltage divi	der biasing for transistors.	4



Q-4		Attempt all questions	(14)
	Α	Compare the characteristics of ideal Op-Amps and practical Op-Amps.	7
	B	Explain Integrator and Zero Crossing Detector using Op-Amps.	7
Q-5		Attempt all questions	(14)
	Α	Describe output Characteristics of JFET.	6
	В	Give difference between JFET and Bipolar Transistors.	5
	С	Explain construction of MOSFET with diagrams	3
Q-6		Attempt all questions	(14)
c	Α	Explain Karnaugh map of three variable using example.	5
	B	Explain in details Half adder and full adder circuits.	5
	С	Simplify the Boolean Expressions:	4
		$AB + \overline{AC} + BC$	
Q-7		Attempt all questions	(14)
	А	Why OP-AMP is not used in open loop for most of the applications?	ົ5໌
	В	Give truth table of XOR and XNOR Gates	5
	С	Convert the following binary to decimals	4
		(a) $(11001)_2$	
		(b) $(10101)_2$	
Q-8		Attempt all questions	(14)
	А	Explain in details Barkhausen's criterion for self-sustained oscillations in	7
		details.	
	В	Explain advantages and applications of UJT.	7

