

## B.Sc. Semester-5 Examination

CC 301

Electronics

March-2024

Time : 2-30 Hours]

[Max. Marks : 70

Q. I		
A)	Explain Differential mode gain and Common mode gain in differential amplifier.	07
B)	Write short note on Current mirror.	07
	<b>OR</b>	
A)	Briefly explain Widlar Current source and Wilson current source	07
B)	Briefly explain (1)Level translator (2)Current repeaters	07
Q.II		
A)	Explain Following Phase shift circuit (1) Phase leg circuit (2) Phase lead circuit with suitable figure.	07
B)	Explain an improved Instrumentation amplifier with suitable circuit diagram.	07
	<b>OR</b>	
A)	Explain any two applications of V-I converter.	07
B)	Explain following Op-amp circuits using diodes. (1) Full wave rectifier (2) Clamper	07
Q. III		
A)	Explain block diagram of IC series regulator and also explain band gap reference circuit of regulator with suitable circuit diagram.	07
B)	Explain 3-terminal adjustable voltage regulator with its diagram.	07
	<b>OR</b>	07
A)	Explain dual non tracking regulator with necessary circuits.	07
B)	Explain positive regulator using IC $\mu A$ 723 with suitable circuit diagram.	07
Q.IV		
A)	Write short note on basic switching regulator.	07
B)	Briefly explain circuit diagram of positive switching regulator using IC LM105.	07
	<b>OR</b>	
A)	Discuss free running switching regulator with necessary circuit diagram.	07
B)	Explain Switching regulators using 3 terminal linear regulator.	07
Q-V	<b>Attempt any seven out of twelve</b>	14
1	What is CMRR in Op-amp?	
2	Draw the schematic block diagram of an Op-amp.	
3	What is differential input resistance in Differential amplifier?	
4	What is inverting summing amplifier?	
5	Write the main important features of an instrumentation amplifier	
6	What is Zener diode tester?	
7	What do you mean by Current limit, safe area limit and thermal limit in regulator protection?	
8	What is safe operating area (SOA) protection?	
9	What do you mean by general type IC regulator?	
10	Draw the block diagram of switching regulator scheme.	
11	What is control circuit consideration in in bulk switching regulator?	
12	What do you mean by Switch mode operation using Linear Voltage Regulator?	