Reg. No.												

Question Paper Code	12420

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2023

Third Semester

Electronics and Instrumentation Engineering

(Common to Instrumentation and Control Engineering)

20EIPC303 - ANALOG ELECTRONIC CIRCUITS

(Regulations 2020)

Duration: 3 Hours Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level, CO
1.	Define carrier life time.	*2,K1,CO1*
2.	How a transistor can be used as a switch?	*2,K1,CO1*
3.	Outline the characteristics of class B amplifier.	*2,K2,CO2*
4.	Compare FET and BJT.	*2,K2,CO2*
5.	What is an oscillator?	*2,K1,CO3*
6.	Classify the different sinusoidal oscillators.	*2,K2,CO3*
7.	Draw and label the inverting op-amp.	*2,K1,CO4*
8.	Mention any two audio frequency oscillators.	*2,K1,CO4*
9.	List the uses of pass transistor in voltage regulator.	*2,K1,CO5*
10.	List the application of 555 timers.	*2,K1,CO5*

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Explain the Energy band structure of open circuited PN junction diode with neat diagram.	*13,K2,CO1*
		OR	
	b)	Summarize the construction and explain the operation of NPN Bipolar Junction Transistor in CB configuration.	*13,K2,CO1*
12.	a)	Explain the construction and operation of depletion mode and Enhancement MOSFET.	*13,K2,CO2*
		OR	
	b)	Demonstrate Class B pushpull amplifier and derive the expression for efficiency of the same.	*13,K2,CO2*
13.	a)	Illustrate with a neat circuit diagram, the working of a Wien bridge oscillator and also derive the expression for the resonant frequency.	*13,K2,CO3*

OR

b) Explain the voltage shunt feedback amplifier. Derive the expression for gain with feedback. *13,K2,CO3*

14. a) Draw the circuit of monostable multivibrator and obtain the expression for pulse width. *13,K2,CO4*

OR

b) Explain basic differentiator and Integrator in detail with neat sketch. *13,K2,CO4*

15. a) Draw and explain the functional block diagram of 723 regulators and explain the IC acts as voltage regulator. *13,K2,CO5*

OR

b) Explain the pin diagram and functional block diagram of 555 timers in detail. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Explain the non-inverting and inverting amplifier of op-amp 741 with relevant expressions. *15,K2,CO4*

OR

b) List the applications of 555 timers in monostable mode and explain any two applications in detail. *15,K2,CO5*