Reg. No.

| Question Paper Code | 11720 |

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV/DEC 2022

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.	What is depletion region in PN junction diode?	2,K1,CO1
2.	What is diffusion current?	2,K1,CO1
3.	Differentiate FET and MOSFET.	2,K2,CO2
4.	List the advantages of push pull amplifier.	2,K2,CO2
5.	Define Amplification factor in JFET.	2,K1,CO3
6.	What is crossover distortion in a power amplifier and how to eliminate it?	2,K1,CO3
7.	List the effect of negative feedback on the noise and bandwidth of an amplifier.	2,K1,CO4
8.	Define piezoelectric effect.	2,K1,CO4
9.	Mention the characteristics of an ideal op amp.	2,K1,CO5
10.	Differentiate between open loop gain and closed loop gain.	2,K1,CO5

PART - B (5 × 13 = 65 Marks)
Answer ALL Questions

11. a) Explain the construction of PN junction diode and explain the operation of it with V-I characteristics curve.   13,K2,CO1

    OR

    b) Explain the working principle and application of SCR.   13,K2,CO1

12. a) Explain the construction and operation of depletion mode MOSFET and draw its characteristics.   13,K2,CO2

    OR

    b) Explain the push pull class B power amplifier and write its application.   13,K2,CO2

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create   **11720**

13. a) Explain the voltage series feedback amplifier circuit and find the gain and impedances.   *13,K2,CO3*

OR

b) Explain the working principle and application of Colpitts oscillator.   *13,K2,CO3*

14. a) Explain how an op-amp can be used as integrator and derive the expression for output voltage.   *13,K2,CO4*

OR

b) Explain the differential amplifier with neat circuit diagram.   *13,K2,CO4*

15. a) Explain how a 555 timer can be used as Astable oscillator.   *13,K2,CO5*

OR

b) Explain the principle and operation of Voltage regulator IC.   *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Explain the input characteristics and output characteristics of a NPN transistor in CE configuration and compare it with CB and CC configurations.   *15,K2,CO1*

OR

b) Explain the modeling of BJT into hybrid model and find the input output parameters when it is used as an amplifier.   *15,K2,CO2*

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create   **11720**