

ANURAG ENGINEERING COLLEGE

(An Autonomous Institution)

II B.Tech I Semester Regular Examinations, Jan/Feb-2024

ANALOG ELECTRONIC CIRCUITS**(ELECTRICAL AND ELECTRONICS ENGINEERING)****Time: 3 Hours****Max. Marks: 60****Section – A (Short Answer type questions)****(10 Marks)****Answer All Questions**

	Course Outcome	B.T Level	Marks
1. What is the formula to calculate the ripple factor for a full-wave rectifier?	CO1	L1	1M
2. What are the applications of PN junction diode?	CO1	L2	1M
3. Explain pinch off voltage.	CO2	L1	1M
4. Why FET is called as “voltage operated device”?	CO2	L2	1M
5. What is class C amplifier?	CO3	L1	1M
6. Compare class A,B, and C power amplifiers.	CO3	L2	1M
7. Define feedback factor or feedback ratio.	CO4	L1	1M
8. State the Barkhausen criterion for an oscillator.	CO4	L1	1M
9. Mention some of the non – linear applications of op-amp.	CO5	L2	1M
10. Define slew rate.	CO5	L1	1M

Section B (Essay Questions)**Answer all questions, each question carries equal marks.****(5 X 10M = 50M)**

11. A) Explain the operation of PN junction diode with its characteristics.	CO1	L2	10M
OR			
B) Describe the working principle of full wave rectifier with centre tapped transformer and derive the expressions for the ripple factor, efficiency, V_{dc} , I_{rms} , I_{Lmax} and V_{rms}	CO1	L3	10M
12. A) Explain the three regions of operation of a MOSFET.	CO2	L3	10M
OR			
B) Explain with the help of neat diagram construction, working & VI characteristics of n channel JFET.	CO2	L3	10M
13. A) Explain in detail about class A amplifier with efficiency calculation.	CO3	L3	10M
OR			
B) Explain in detail about class B push-pull amplifier with efficiency calculation.	CO3	L3	10M
14. A) Explain crystal oscillator and derive the equation for oscillation.	CO4	L3	10M
OR			
B) Explain the relevant information, how the negative feedback improves stability reduce noise and increase input impedance?	CO4	L3	10M
15. A) Explain differentiator with its circuit diagram and explain its operation.	CO5	L3	10M
OR			
B) Explain the working of op-amp non inverting amplifier and derive the expression for its voltage gain.	CO5	L3	10M

