Reg. No. : | | | | | | | | | | | | |

Question Paper Code: U3303

B.E./B.Tech. DEGREE EXAMINATION, NOV 2024

Third Semester

Electrical and Electronics Engineering

21UEE303 – ANALOG ELECTRONICS

(Regulations 2021)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. In the case of P-type semiconductor the _____are the majority carriers CO1- U

   (a) Holes (b) Electrons (c) Both A and B (d) None of the above

2. In a CB amplifier the maximum efficiency could be CO1- U

   (a) 99% (b) 85% (c) 50% (d) 25%

3. For an ideal voltage amplifier circuit, what should be the value of input resistance? CO2- U

   (a) Zero (b) Infinity (c) Unity (d) Unpredictable

4. In class B amplifier, the output current flows for CO2- U

   (a) less than half input cycle (b) more than half input cycle

   (c) half input cycle (d) entire input cycle

5. In Instrumentation Amplifier, if all resistance values are 2kΩ then what is the gain value? CO2-App

   (a) 4 (b) 3 (c) 6 (d) 8

6. In negative feedback circuit the differential input voltage between two inputs is …… CO3- U

   (a) Same (b) V1 (c) Zero (d) One

7. In Mono-stable Multivibrator both states are _____ CO4- U

   (a) Stable and quasi states (b) quasi states

   (c) Only stable states (d) none of the above

8. Zero crossing detectors is also called as CO4- U

(a) Square to sine wave generator (b) Sine to square wave generator

(c) Sine to triangular wave generator (d) All of the above

9. The device used for producing accurate time delay ____ CO5- U

(a) VCO (b) 555 Timer

(c) Multivibrator (d) both (a) and (b)

10. In VCO, unwanted oscillations are eliminated by capacitor of Range ____? CO5- U

(a) 0.001µF (b) 0.01µF (c) 1 µF (d) 0.0000 µF

PART – B (5 x 2= 10Marks)

11. Draw the VI characteristics of PN junction diode. CO1- U

12. Write the Hybrid parameters equation for transistor amplifier? CO2- U

13. Design an amplifier with gain of +5 and input resistance 10kΩ using one op-amp CO3- App

14. What are the applications of comparator? CO4- U

15. List the various components in PLL. CO5- U

PART – C (5 x 16= 80 Marks)

16. (a) Explain the forward and reverse characteristic of PN junction diode and obtain its VI characteristic curve. CO1- U (16)

Or

(b) Explain the construction and operation of n-channel MOSFET with neat diagrams CO1- U (16)

17. (a) Explain about BJT small signal analysis with a neat diagram? CO2- U (16)

Or

(b) Explain in details about Multistage Amplifier? CO2- U (16)

18. (a) Classify the applications of Op-amp used for Integrating and Differentiating the given input. CO3- Ana (16)

Or

(b) Design an amplifier circuit which has high CMRR, very low DC offset, and high open loop gain. CO3- Ana (16)

19.	(a)	Develop a circuit to generate square wave simultaneously with the frequency of 1KHz	CO4- App	(16)
		Or		
	(b)	Explain in details about different application of Comparator	CO4- U	(16)
20.	(a)	Develop a circuit to generate one pulse with the frequency of 1KHz using 555 Timer	CO5- App	(16)
		Or		
	(b)	Explain in details about 566 Voltage Controlled Oscillator circuits	CO5- U	(16)