Reg. No.												

Question Paper Code	11657

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

Fourth Semester

Electronics and Communication Engineering

20ECPW401 - ELETRONIC CIRCUITS WITH LABORATORY

(Regulations 2020)

Duration: 3 Hours | Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

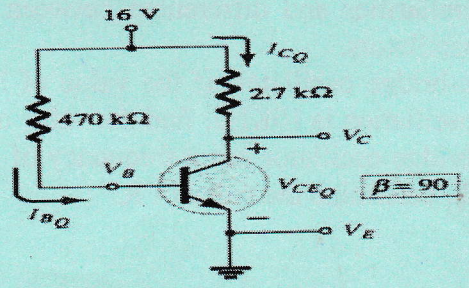
Answer ALL Questions

		Marks, K-Level, CO
1.	State the function of Q-point.	2,K1,CO1
2.	Define bias stability.	2,K2,CO1
3.	Compare cascade and cascode amplifiers.	2,K2,CO2
4.	Draw the h parameter equivalent model for CB BJT amplifier.	2,K2,CO2
5.	A tuned amplifier has its maximum gain at a frequency of 2 MHz and has a bandwidth of 50 KHz. Calculate the Q factor.	2,K2,CO4
6.	Define gain product bandwidth of tuned amplifiers.	2,K1,CO4
7.	List the applications of monostable multivibrators.	2,K1,CO5
8.	Define duty cycle.	2,K1,CO5
9.	What is Class C amplifiers efficiency?	2,K1,CO6
10.	Classify Power amplifiers.	2,K2,CO6

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	(i) Draw the DC load line of fixed bias circuit and derive the Stability factor S.	5,K2,CO1
		(ii) For the fixed bias circuit Compute I_{BQ} ,I_{CQ},V_{CEQ} and V_C	8,K2,CO1



OR

b) Construct a voltage divider bias circuit and derive its stability factor and also give reasons why it is advantageous than fixed bias circuit. *13,K3,CO1*

12. a) Draw CE amplifier and its small signal equivalent. Derive its A_{vs}, A_i, R_{in},R_o. *13,K2,CO2*

OR

b) Explain the emitter coupled differential amplifier with neat diagram and derive expression for CMRR. *13,K2,CO2*

13. a) Construct the double tuned amplifier with a neat circuit diagram and derive the expression for 3dB bandwidth. *13,K2,CO4*

OR

b) Illustrate the stability of tuned amplifiers and mention the need of neutralization. *13,K2,CO4*

14. a) Illustrate the operation of collector coupled a stable multivibrator with neat diagrams and waveforms. *13,K2,CO5*

OR

b) Explain the working principle of Bi stable multivibrator with neat diagram. *13,K2,CO5*

15. a) Explain the operation of Class-AB complementary/symmetry power amplifier with appropriate circuit diagram and its load line. Give the expression for dc power input, ac power output and efficiency. *13,K2,CO6*

OR

b) Explain the working of series fed and transformer coupled class A amplifier with neat diagrams. Also derive its efficiency. *13,K2,CO6*

PART - C (1 × 15 = 15 Marks)

16. a) Explain the effect of a current series feedback on input and output resistance of a BJT amplifier with circuit diagram. Draw its equivalent circuit and derive the equation. *15,K2,CO3*

OR

b) (i) List the similarities and differences between RC phase shift and Wein bridge oscillators. *8,K1,CO3*

(ii) In a Wein-bridge oscillator, if the value of R = 100KΩ, and the frequency of oscillation is 10KHz, find the value of Capacitor. *4,K2,CO3*

(iii) A Wein-bridge oscillator has a frequency of 500kHz. If the value of C is 1000pF, determine the value of R. *3,K2CO3*