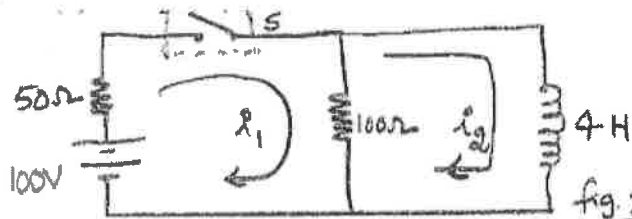
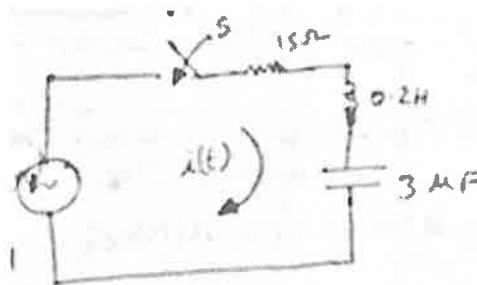


MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)(Affiliated to JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD)
Gundlapochampally (H), Maisammaguda (V), Medchal (M), Medchal-Malkajgiri (Dist), Hyderabad**II B.TECH II SEMESTER SUPPLEMENTARY EXAMINATIONS, DECEMBER -2018**Subject: : NETWORK THEORYBranch: **EEE****Time: 3 hours****Max. Marks: 75**Answer any **FIVE** Questions of the following**5x15M=75M**

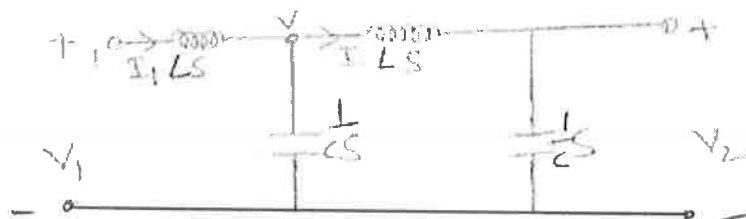
1. a) Prove that two Walmeters are enough to measure 3-phase supply in balanced 3- ϕ load.
b) A 3- ϕ motor operating on a 440V, 50 Hz supply system is developing 25Kw at an efficiency of 90% and a power factor of 0.85. Calculate i) the line current and (ii) the phase current if the windings are delta-connected.
2. a) In the circuit shown in fig., the switch is closed at $t=0$, Find (i) an expression for source current
(ii) An expression for coil current.



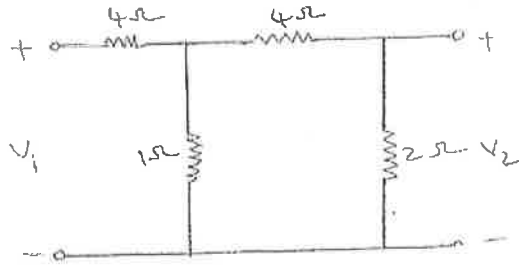
3. a) Derive expression for the transient response of an R L series circuit excited by sinusoidal excitation. [7+8]
b) In the circuit shown in fig.1, determine the complete solution for the current, when the switch is closed at $t=0$. Applied voltage is $v(t) = 400\cos(500t + \frac{\pi}{4})$ Resistance $R=15\Omega$, inductance $L=0.2H$ and capacitance $C=3\mu F$.



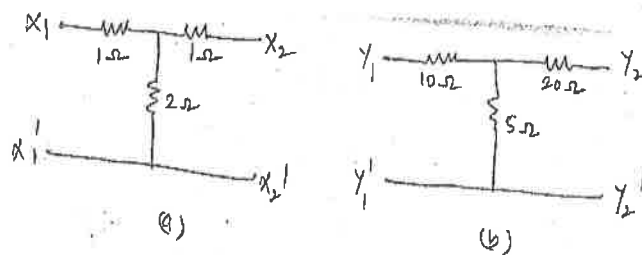
4. a) Write the properties and necessary condition for transfer function.
b) Determine the driving point impedance for the given network shown in figure



5. a) Explain briefly about Admittance parameters and discuss their physical significance.
 b) Determine the Admittance parameters for the given network shown in figure and draw its equivalent circuit.

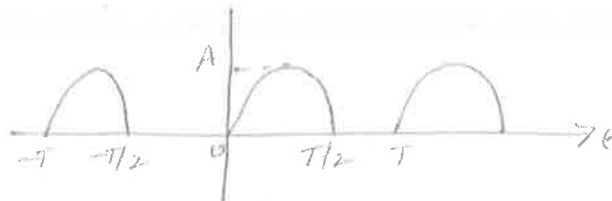


6. a) What type of parameters are suitable to describe series connection of Two-port Network and drive the expression for resulting parameters.
 b) Two networks shown in figures (a) and (b) are connected in series. Obtain the Z parameters of the combination. Also verify by direct calculation.

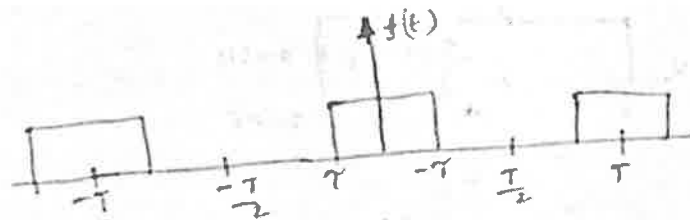


7. What is a constant-k low pass filter? Derive its characteristics impedance.
 8. a) Obtain the Fourier analysis of the wave form shown in figure

[7+8]

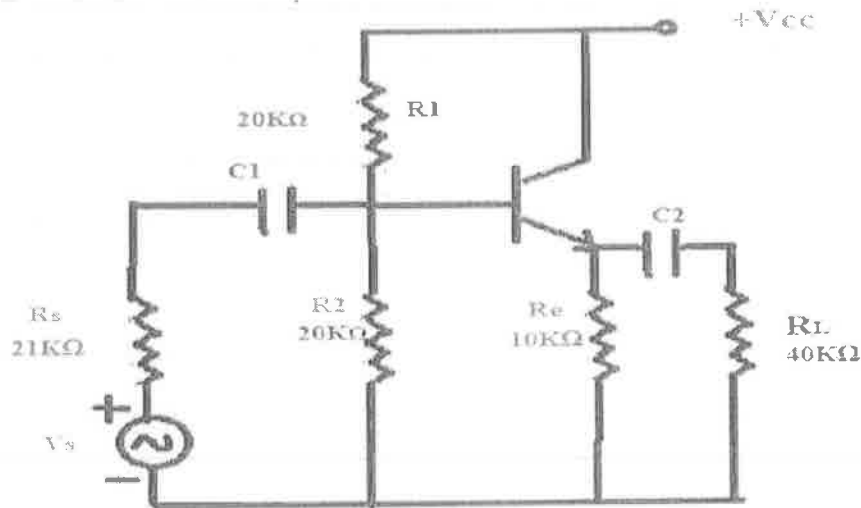


- b) Determine the Fourier series of the wave form shown in fig. Using Trigonometric series.



MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)(Affiliated to JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD)
Gundlapochampally (H), Maisammaguda (V), Medchal (M), Medchal-Malkajgiri (Dist), Hyderabad**II B.TECH II SEMESTER SUPPLEMENTARY EXAMINATIONS, DECEMBER -2018**Subject: **ELECTRONIC CIRCUITS**Branch: **EEE****Time: 3 hours****Max. Marks: 75**Answer any **FIVE** Questions of the following**5x15M=75M**

1. a) Calculate the current gain A_i , voltage gain A_v , Input Resistance R_i and output Resistance R_o for the Common collector Amplifier shown in figure whose transistor parameters are $h_{ie} = 1.4 \text{ K}\Omega$, $h_{fe} = 100$, $h_{fc} = 100$, $h_{re} = 20 \mu\text{A/V}$, $h_{oc} = 20 \times 10^{-6}$. [8+7]



- b) Write about the various Distortions in Amplifiers.
2. a) What do you mean by frequency response of amplifier? How is it plotted?
b) For an amplifier, 3dB gain is 200 & higher cutoff frequency is 20KHz. Find the gain of the amplifier at frequency 100KHz. [7+8]
3. a) Explain the effect of negative feedback on Input Resistance for Voltage series and Current shunt feedback amplifiers. [8+4+3]
b) Explain with the circuit diagram a negative feedback amplifier and obtain the expression for its closed loop gain.
c) What are the disadvantages of negative feedback amplifier.
4. a) Derive an expression for the frequency of oscillation of Hartley oscillator using transistor.
b) What are the factors that effect the frequency stability of an oscillator? [8 +7]

5. a) Explain the operation of Class D amplifier. [7+5+3]
 b) How are amplifiers classified based on biasing conditions.
 c) A class A power amplifier has a transformer as load. If the transformer has turns ratio of 5 and secondary load is 100Ω . Determine the maximum ac power output given that zero signal collector current is 100 mA.
6. a) Explain the operation of emitter coupled clipper with neat circuit diagram and plot its transfer characteristics. [10]
 b) Compare clippers and clampers [5]
7. a) Explain the various regions of operation of a transistor. [8]
 b) Consider high speed transistor in CE configuration with $V_i = V(0) = -2.5V$ for logical 0 and $V_i = V(1) = 5V$ for logical 1. Determine the output levels for switch. The static current gain h_{fe} of transistor is 25 and $V_{BE(sat)} = 0V$ and $V_{CE(sat)} = 0V$. Calculate I_B and I_C of the transistor. [7]
8. a) Explain the operation of self-biased bistablemultivibrator. (7)
 b) Design a fixed-bias bitable multivibrator using Ge transistors having $h_{FE(min)} = 50$, $V_{CC} = 10 V$ and $V_{BB} = 10 V$, $V_{CE(sat)} = 0.1 V$, $V_{BE(sat)} = 0.3 V$, $I_{C(sat)} = 5 mA$ and assume $I_{b(sat)} = 1.5I_{B(min)}$. (8)