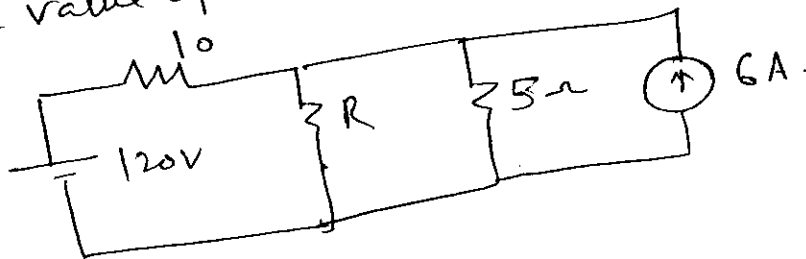


Part c

- Q1 (a) Give the Statement of the following Theorem
1) Norton's Theorem (II) Thevenin's Theorem (III)
Super position Theorem (IV) Maxm power transfer theorem
- (b) Derive an expression for maxm power in Electrical Circuit
Find the value of R which will absorbed maxm power from the ckt shown in fig, Also compute the value of maxm power.



- Q2 (a) Give reasons: resonant
1) why series ckt is called as an acceptor and parallel resonant ckt as a rejecter circuit?
ii) How do you improve power factor of the ckt
iii) what do you understand by the term (a) Bandwidth (b) quality factor.
- (b) In a series parallel ckt of given fig the parallel branch A and B are in series with C. The impedance are
 $Z_A = 4 + j3$
 $Z_B = 10 - j7$
 $Z_C = 6 + j5$
If the voltage applied to the circuit is 200V at 50Hz.
Find current I_A , I_B and I_C (b) Total Pf of the whole circuit. Draw vector diagram also.

- Q3 Explain the construction and working principle of dynamometer type wattmeter and show how its deflecting force is proportional to the average value of power?
b) Derive and explain the two wattmeter method of measurement of 3 ϕ power for balanced star connected load. How is three phase power is determined.

- Q4 a) 1) Give a typical layout of power system between generator and use of electrical power.
 1) Differentiate between feeder, distributor and service main.

(b) Draw a phasor diagram of X_{EV} at load of power factor lagging.

A 2.5 kVA X_{EV} 2200/220V 50Hz has the

following parameters.

$$\left. \begin{aligned} r_1 &= 1.2 \Omega \\ X_1 &= 6.0 \Omega \\ r_w &= 1000 \Omega \end{aligned} \right\} \begin{array}{l} \text{HV} \\ \text{d'd} \end{array} \quad \left. \begin{aligned} r_2 &= 0.03 \Omega \\ X_2 &= 0.06 \Omega \\ X_m &= 3000 \Omega \end{aligned} \right\} \begin{array}{l} \text{LV side} \\ \text{hV d'd} \end{array}$$

Draw the equivalent circuit referred to LV side for a 0.8 Pf lagging load being supplied at 220V.

Q5 (a) Explain the principle and operation of 1 ϕ induction motor. Why single phase motor is not self starting? What are the methods for starting of 1 ϕ induction motor.

(b) ~~A 3 ϕ 50Hz induction~~ A 250V delta connected motor having an armature resistance of 0.25 Ω carries an armature current of 50A and runs at 750 r.p.m. If flux is reduced by 10%. Find the speed. Assume load torque remains the same.