

# RAWAL INSTITUTE OF ENGG.& TECHNOLOGY, FARIDABAD

## Questionnaire

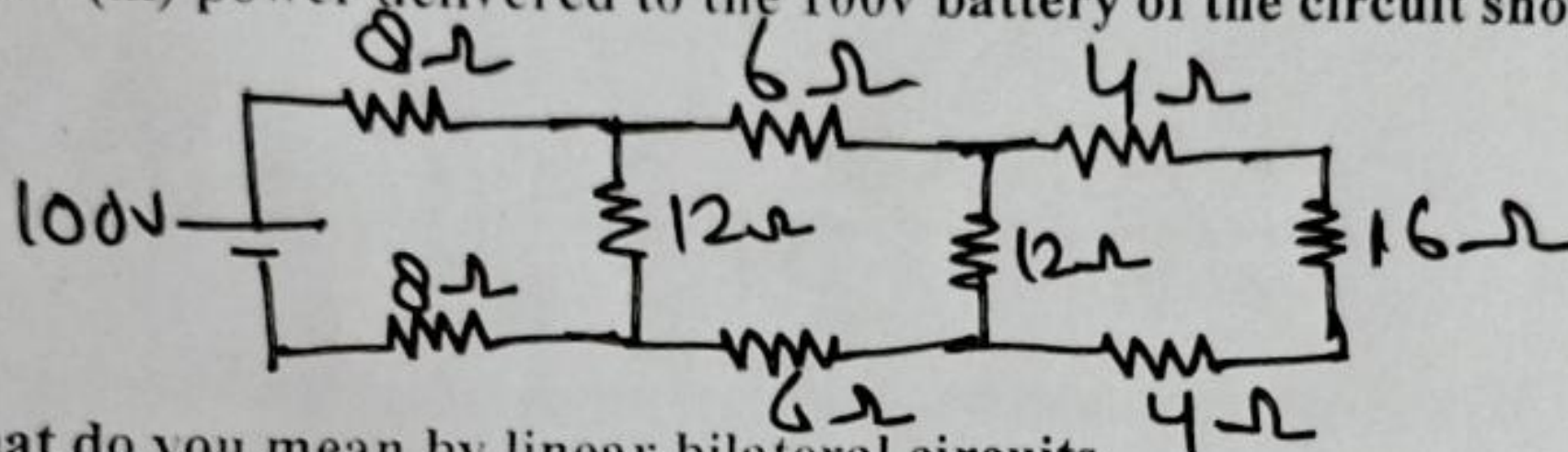
B.tech 1st Semester  
Basic of Electrical Technology(101-A)

Date-4/1/2022

### UNIT-1 DC CIRCUITS

Q 1 State Kirchoff's voltage law and kirchoff's current law?

Q 2 Calculate (i) equivalent resistance across the terminal of supply (ii) total current supplied by the source (iii) power delivered to the 100v battery of the circuit shown in below



Q 3 What do you mean by linear bilateral circuits.

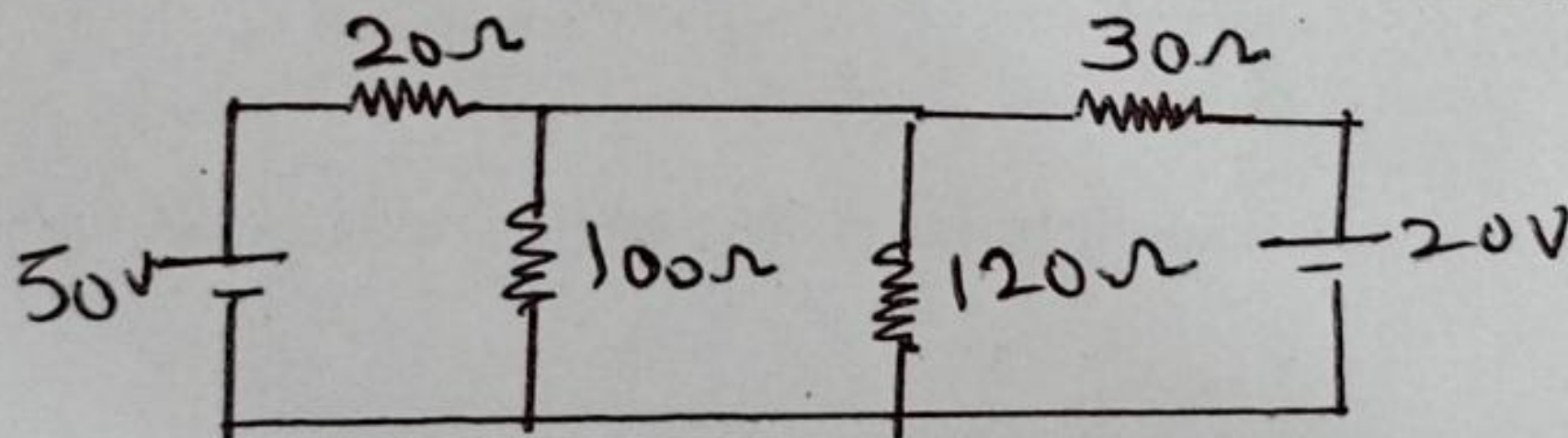
Q 4 what is utility of maximum power transfer theorem.

Q 5 Define active and reactive power.

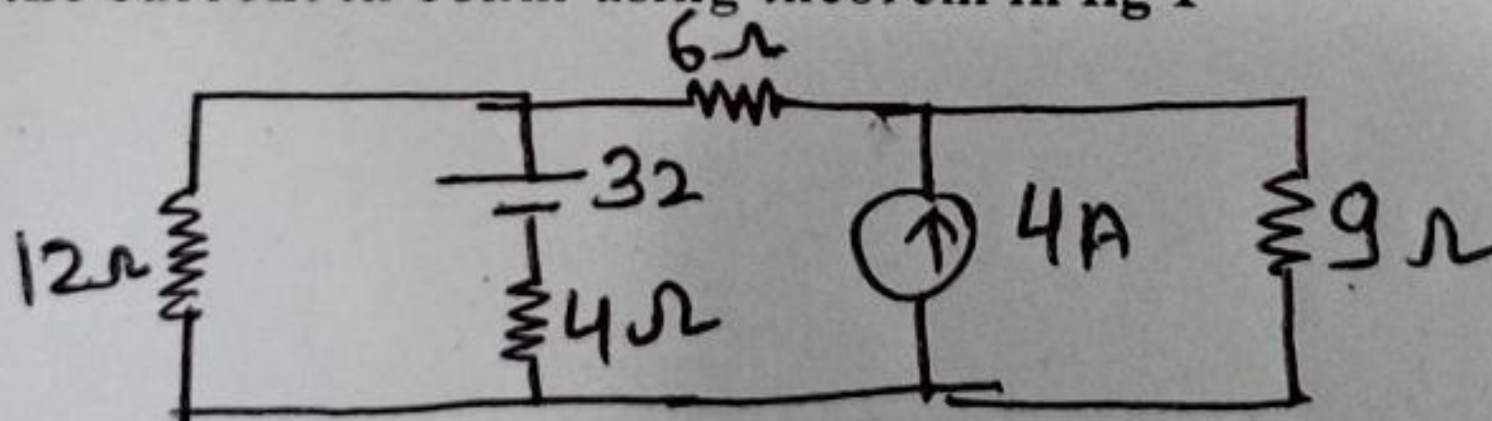
Q 6 What is the utility of superposition theorem

Q 7 State norton theorem illustrates the application of the theorem with reference to an appropriate electric network

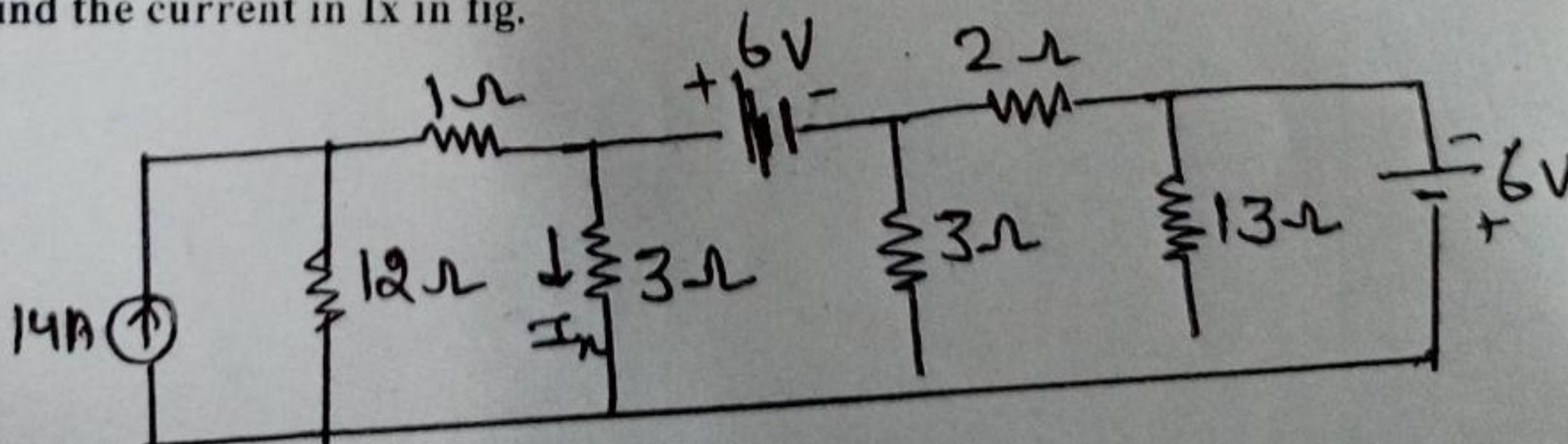
Q 8 Using nodal analysis method ,find the each branch current in figure 1



Q 9 find the current in 6ohm using theorem in fig 1



Q 10 find the current in  $I_x$  in fig.



## UNIT-2 AC CIRCUITS

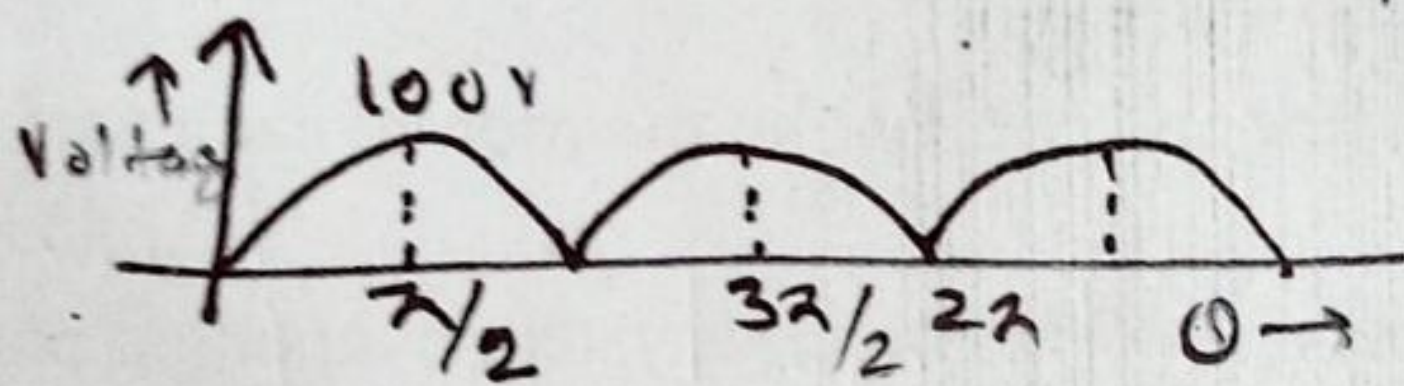
Q1 Define Q factor.

Q2 A Practical parallel resonant circuit consists of a coil, having a resistance of 150ohm and an inductance of 0.24 H, in parallel with a lossless capacitor of capacitance  $3\mu\text{f}$ . Find the resonant frequency, Q factor and bandwidth.

Q3 What domain by B H curve?

Q4 Define resonance in RLC parallel circuits, Define the expression for resonant frequency for the same. Also draw the resonance curve.

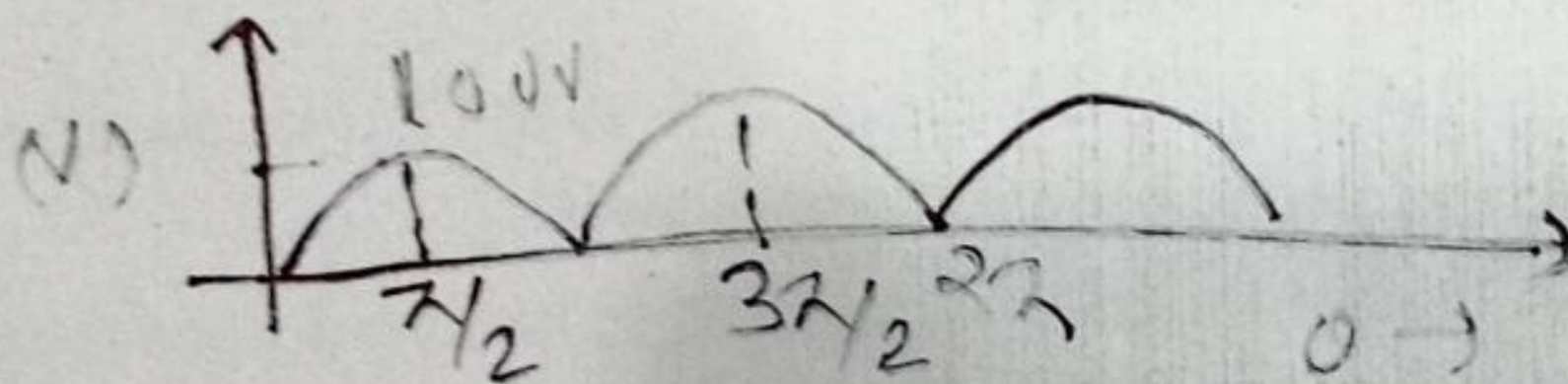
Q 5 Calculate the average value, RMS value, form factor and peak factor for figure 2.



Q 6 Explain the parallel resonance and draw the frequency verses current graph for the same

Q 7 Define the form factor and peak factor.

Q 8 What is the significance of the rms and average value of a wave? Determine the rms and average value of the waveform shown in figure.



Q 10 what is main advantage of purely sinusoidal waveform?

### UNIT 3

### POLY PHASE SYSTEM

Q 1 Differentiate between phase and line voltages in three phase system.

Q2 Explain two wattmeter method of power measurement in three phase AC system at balanced load. What are the effects of power factor on wattmeter reading?

Q 3 A balanced 3 phase star connected load of  $8+j6$  ohms per phase is connected to a three phase 230v supply. Find the line-current, power factor, active power, reactive power and total volt-amperes.

Q 4 Enlist the various part of DC machine and explain the function of each part.

Q 5 Describe advantages and disadvantages of three phase system over single phase system.

### UNIT 4

### TRANSFORMERS

Q 1 What happens if the DC motor is applied to the transformer?

Q2 Derive emf equation of single phase transformer.

Q 3 Describe the construction details of single phase transformer.

Q 4 what is the significance of back emf.

**UNIT 5**  
**ELECTRICAL MACHINES**

Q1 Explain dc construction and working of dc motor.

Q 2 Enlist the various part of DC machine and explain the function of each part.

Q3 What happens if the DC motor is applied to the transformer?

Q 4 with neat sketches explain the construction of three phase salient pole synchronous generator.

**UNIT 6**  
**ELECTRICAL INSTALLATIONS**

Q1 What is MCB ? Explain its function and working with neat diagram.

Q 2 Describe the electrical characteristics of lead acid batteries

Q 3 What is earthing ? why it is provided? Draw the next sketch of pipe earthing

Q 4 what is the objective of earthing? explain different methods of earthing?