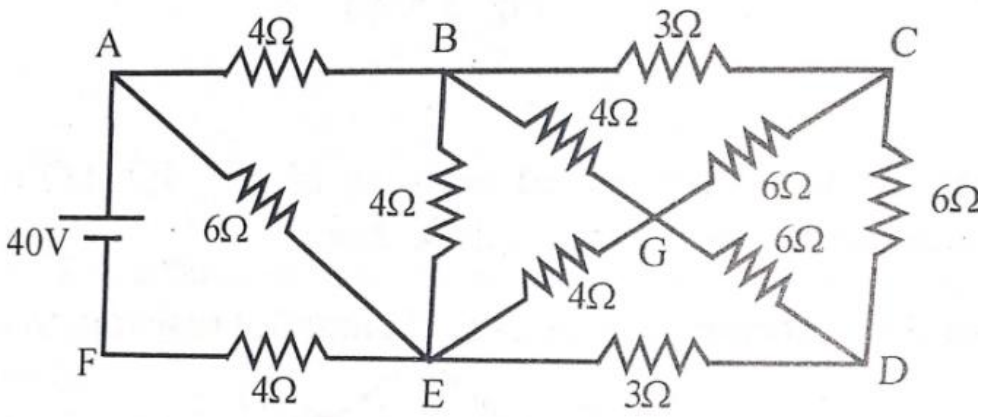
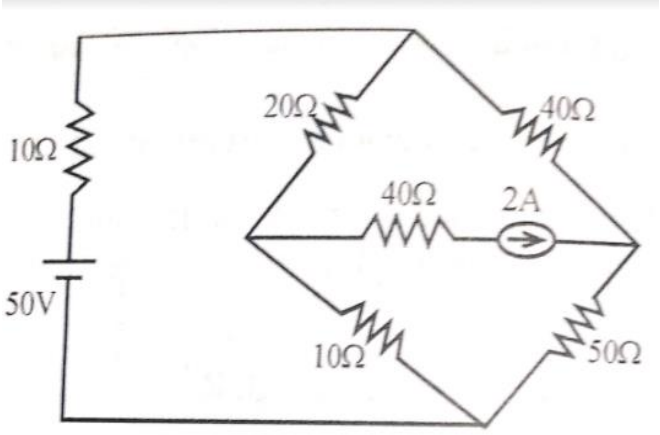
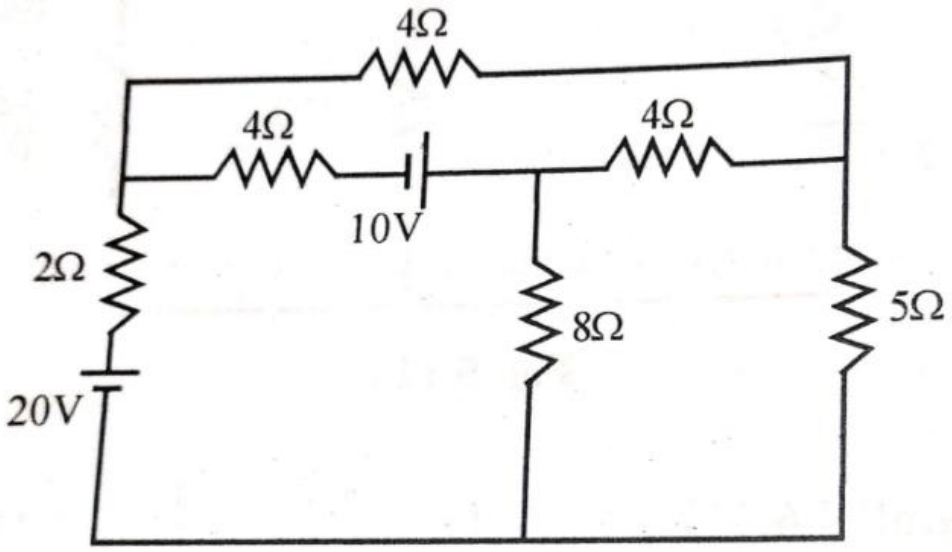
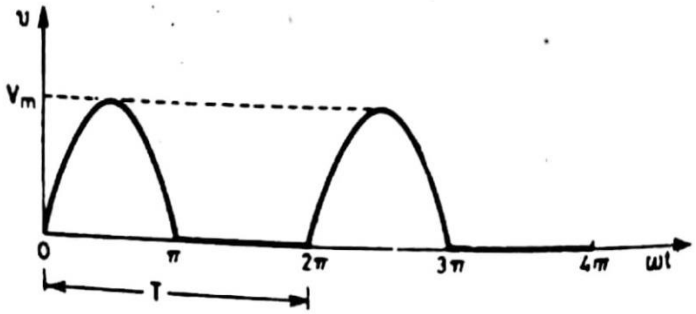
POKHARA UNIVERSITY

Level: Bachelor	Semester – Spring	Year:2020
Program: BE		Full Marks: 70
Course: Basic Electrical Engineering.		Pass Marks: 31.5
		Time: **2** hrs.

Candidates are required to answer in their own words as far as practicable.
The figures in the margin indicate full marks.

Attempt all the questions.

Section - A: (5×10=50)		
Q. N. 1	Describe the energy sources and explain the Role of electricity in modern society, Draw generation, transmission and distribution of electrical energy layout diagram.	3+3+4
Q. N. 2	State the maximum power transfer theorem. Determine the current supplied by source of the given circuit below using delta-star transformation. 	3+7
Q. N. 3	State the thevenin's theorem. Apply the Norton's theorem to calculate power absorbed in 50 ohm resistor for the network of figure below. 	2+8

Q. N. 4	Determine the current through 5 ohm resistor of the given network shown below using superposition theorem. Verify by mesh current method.  	5+5
Q. N. 5	Define average values and RMS or effective value of any types of alternating voltage or current waveform. For the given output voltage wave form: Determine: Form factor and peak factor.  **OR** How do you differentiate single phase with three phase system and write the advantages of three phase system over single phase system. Explain how we can measure three phase power by two wattmeter method.	3+7 2+3+5
Section - B: (1×20=20)		
Q. N. 6	a) A 600KVA, single phase transformer when working at unity power factor has an efficiency 92% at full load and also at half load. Determine its efficiency when it operates at unity power factor and 60% of full load. b) 220 V, dc shunt motor draws 5 A while running at 800 rpm on load. Calculate the speed when the motor takes 45 A on load with its field weakened by 4 % by armature reaction. Assume armature and field resistance as 0.3 Ω and 246 Ω respectively.	10+10