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Total Pages : 4

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July 2023

B.Tech. - II SEMESTER

Basic Electrical Technology (ESC-101-A)

Time : 3 Hours] [Max. Marks : 75

Instructions :

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART-A

1. (a) What is the significance of form factor and peak factor? (1.5)

   (b) What is the purpose of using laminated core in a transformer? (1.5)

   (c) State the Superposition theorem. (1.5)

   (d) Distinguish between active circuit and passive circuit. (1.5)

   (e) Define the voltage regulation of transformer. (1.5)

(f) What is the difference between dependent source and independent sources? (1.5)

(g) How do you make Single-Phase Induction Motor Self-Starting? (1.5)

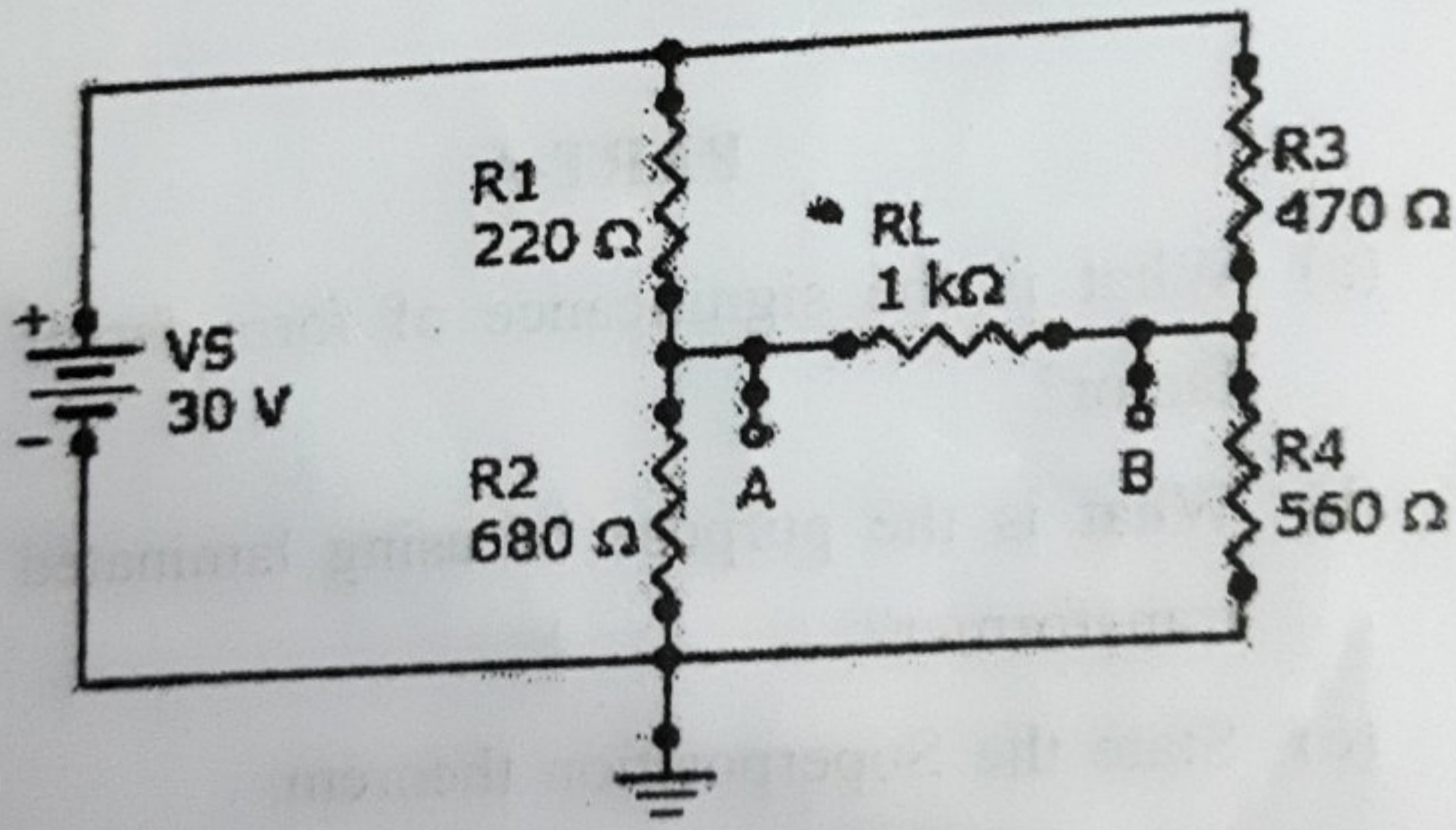
(h) How Back Emf is generated in a DC motor? What is the significance of back emf? (1.5)

(i) What are the advantages of three-phase system over single-phase system? (1.5)

(j) Explain the difference of fuse and MCB. (1.5)

PART–B

2. (a) Find the Thevenin equivalent (V_{TH} and R_{TH}) between terminals A and B of the circuit given below. (7.5)



(b) A balanced three phase load consists of three coils each having resistance of 4 Ω and inductance 0.02 H. It is connected to a 415 V, 50 Hz, 3-phase ac supply. Determine the phase voltage, phase current,