



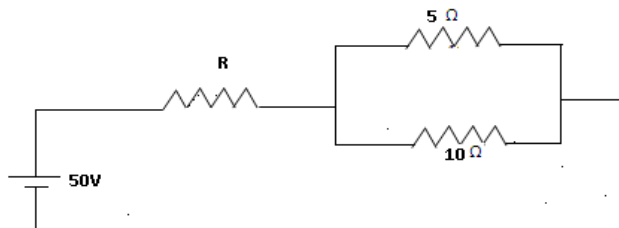
I B.Tech II Sem Supply End Examination, July(March) 2021

Basic Electrical Engineering**(ECE)****Time: 3 Hours.****Max. Marks: 70**

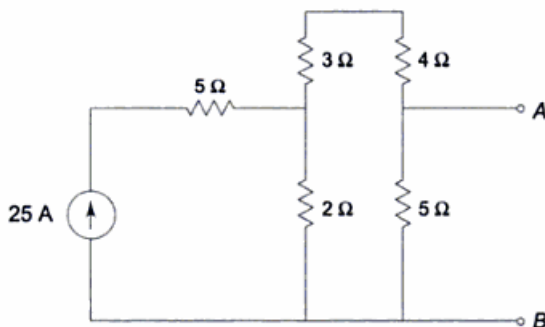
Note: 1. Answer any FIVE questions.

2. Each question carries 14 marks and may have a, b as sub questions.

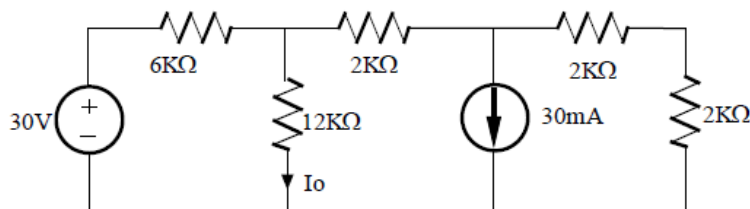
- 1 a) For the given figure find the value of R such that the power dissipated in the 5Ω resistor is $100W$. Assume the internal resistance of the battery of $50V$ to be 1Ω 7M C01 BL3



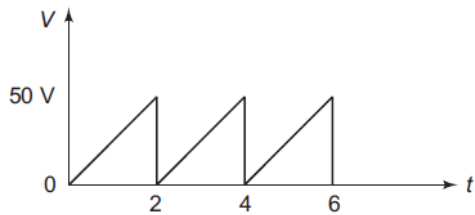
- b) Determine Norton's equivalent circuit for the given circuit shown in below figure. 7M C01 BL3



- 2 a) Derive the expression for current flowing through first order RL circuit for DC excitation. 7M C01 BL2
- b) Find I_o using superposition theorem for the circuit shown below figure 7M C01 BL3



- 3 a) Find the RMS value of the periodic waveform shown in below figure 7M C02 BL3



- b) The impedances of parallel circuit are $Z_1=(6+j8)$ & $Z_2=(8-j6)$. If the applied voltage is 120V, find
- Current & power of each branch.
 - Overall current & power factor of the combination
- 7M C02 BL3
- 4 a) A choke coil is connected across a 250V 50Hz supply. If the input current be 10A and power loss in the choke be 1KW. Find the impedance, resistance and inductance of the choke 7M C02 BL2
- b) Write short notes on star-delta connection in three phase transformer. 7M C02 BL1
- 5 Explain operation of single phase practical transformer. 14M C02 BL2
- 6 Explain Construction and working of a three-phase induction motor 14M C03 BL2
- 7 a) How is the speed of a three phase induction motor controlled by its stator voltage control? 7M C03 BL1
- b) Explain working principle of MCCB. 7M C04 BL2
- 8 a) What is the significance of power factor improvement? 7M C04 BL1
- b) What are types of batteries? Explain briefly types of wires. 7M C04 BL2

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