

Reg. No.:

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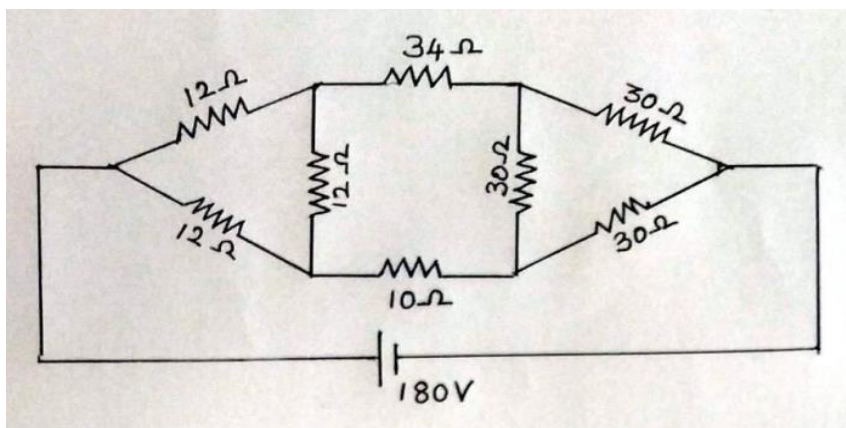
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Mid-Term Examinations – November 2021

Programme	: B. Tech	Semester	: Fall Semester 2021-22
Course	: Electric Circuits and Systems	Code	: EEE1001
Faculty	: J. Sharmila Joseph	Slot/ Class No.	: E11+E12+E13/0158
Time	: 1 ½ hours	Max. Marks	: 50

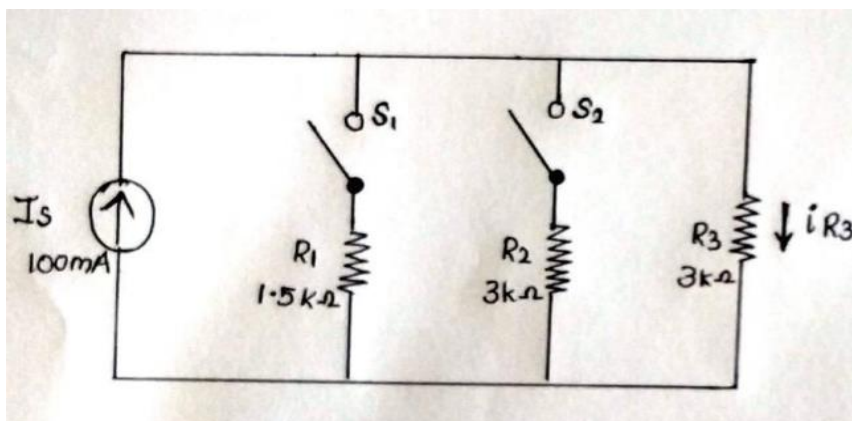
Answer all the Questions

Q.No.	Sub. Sec.	Question Description	Marks
1		Find the current flowing through 10Ω resistor in the network shown below using Thevenin's theorem and draw the Thevenin equivalent circuit.	



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- 2 (a) In the circuit shown below, the switches can be opened or closed to control the current through R_3 . Calculate the current through R_3 for all combinations of the switches being open closed.



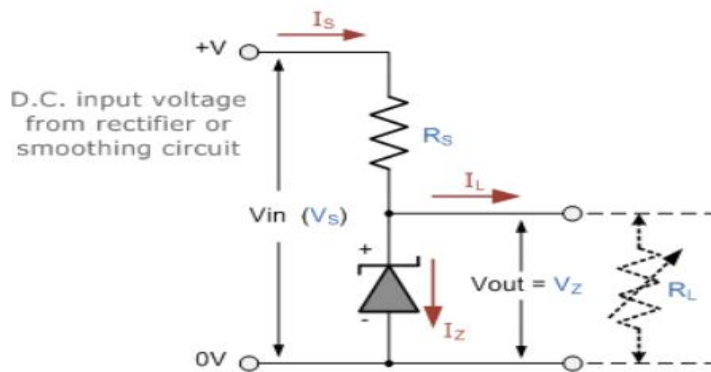
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- (b) A 230 V, 50 Hz ac supply is applied to a coil of 0.06 H inductance and 2.5 resistance connected in series with a 6.8 μ F capacitor. Calculate (i) Impedance (ii) Current (iii) Phase angle between current and voltage (iv) power factor. 5

3 Which is the most preferred configuration in transistor for amplification and Why? Draw its circuit diagram and analyse the input and output characteristics. 10

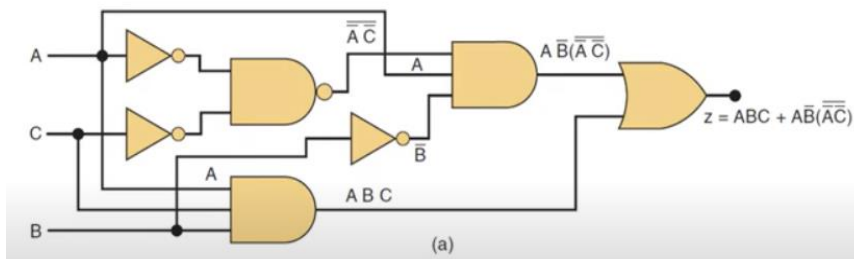
4 A 5.0V stabilized power supply is required to be produced from a 12V DC power supply input source. The maximum power rating P_Z of the Zener diode is 2W. Using the Zener regulator circuit below, Calculate

1. The maximum current flowing through the Zener diode
2. The minimum value of the series resistor R_s
3. The load current I_L , if the resistor of 1K Ω is connected across the Zener diode.
4. The Zener current I_Z at full load.



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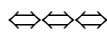
5 (a) Simplify the logic circuit shown below.



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(b) Implement an inverter using only NAND gate

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Note:

RBT – Revised Bloom’s Taxonomy

KL1 – Remember, KL2-Understand, KL3-Apply, KL4-Analyse, KL5-Evaluate, KL6-Create

CO – Course Outcome