Roll No. | | | | | | | | | | |

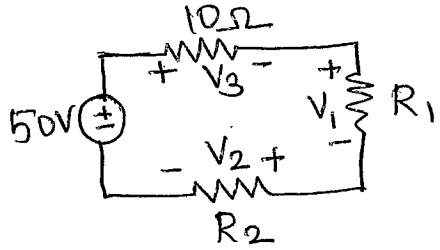
B.E (FT) END SEMESTER EXAMINATIONS – NOV / DEC 2024

Computer Science and Engineering
Semester III
EE6351 – Basics of Electrical and Electronics Engineering
(Regulation 2018 - RUSA)

Time: 3 Hours | Answer ALL Questions | Max. Marks 100

PART-A (10 x 2 = 20 Marks)

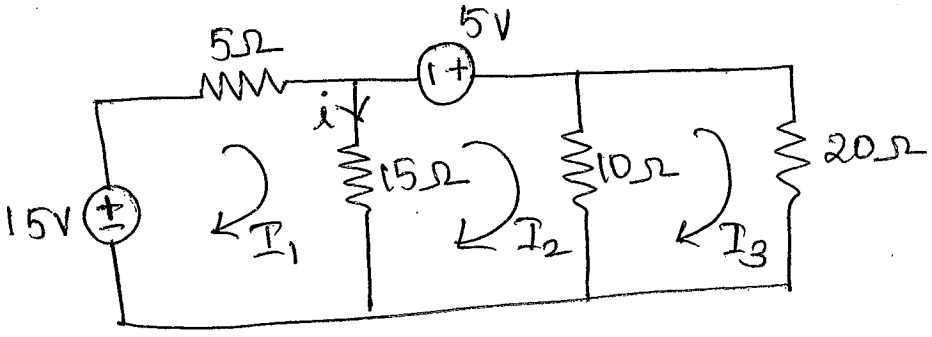
1. V1=10V, V2=20V, find R1 and R2 for the given circuit.



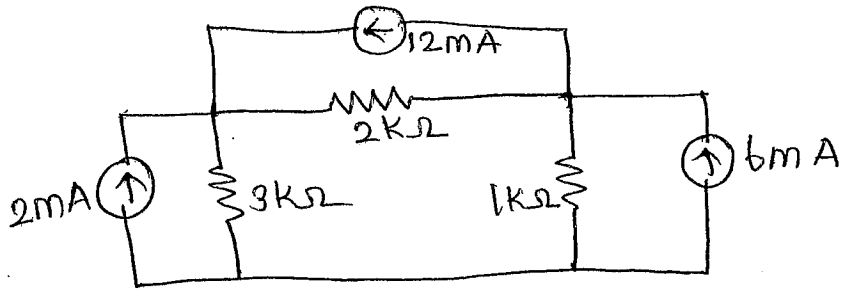
2. Define Power and Power factor.
3. What is armature reaction? What are the two effects of it?
4. A 220V dc motor has an armature resistance of 0.75Ω. It is drawing an armature current of 30A, driving a certain load. Calculate induced emf in the motor?
5. Derive the rms current of half wave rectifier.
6. Draw the circuit of CE amplifier.
7. Design an opamp with a gain of -2 and feedback resistor is 100Ω.
8. Define slew rate.
9. Differentiate positive feedback and negative feedback.
10. Sketch the output characteristics of DMOS

PART – B (8 x 8 = 64 marks)
(Answer any 8 questions)

11. Find the value of 'i' using mesh analysis.



12. Calculate the current flowing through 2 KΩ resistor using nodal analysis.



13. Explain the working principle of DC generators with neat diagram.

14. Briefly explain about the types of dc motors.

15. With neat circuit diagram, explain the operation of single phase induction motor.

16. Derive the following parameters of full wave rectifier.

    a) Average dc load current

    b) RMS current

    c) Ripple factor

    d) Voltage Regulation

17. What is voltage divider biasing? Explain in detail.

18. With neat sketch, explain about differential amplifier using BJT.

19. Derive the transfer function of first order high pass filter.

20. What is DAC? Explain the working principle of Binary weighted resistor DAC.

21. Briefly explain about successive approximation of ADC.

22. Explain the concept of MOSFET. Also explain about EMOS and DMOS.

PART – C (2 x 8 = 16marks)

23. Analyse the common emitter amplifier using π model. Also draw the frequency response of midband.

24. Explain about speed control of dc motor and it types.