

B.Tech. I Year I Semester Supplementary Examinations, April 2022

Basic Electrical and Electronics Engineering

(Common to EEE, ECE, CSE & IT)

Maximum Marks: 70

Date: 10.05.2022 Duration: 3 hours

- Note:
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
 3. Part B consists of 5 Units. Answer any one full question from each unit.
 4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks

10x2M=20M

1. Define the active elements and passive elements.
2. Why star to delta conversion is required.
3. State Thevenin's theorem.
4. State the superposition theorem?
5. Define recovery time.
6. Write the Zener diode applications?
7. Define ripple factor.
8. Compare L-filter and C-filter.
9. Draw the diode symbol and Zener diode symbol.
10. Differentiate between BJT and FET.

Part-B

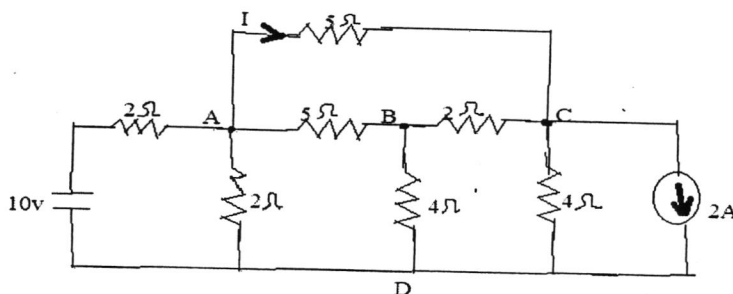
Answer all the questions

5X10M = 50M

11. Explain the Kirchhoff's laws? 10M

(OR)

12. Calculate the current flowing in the 5Ω branch AC of the circuit shown in fig. using nodal analysis. 10M



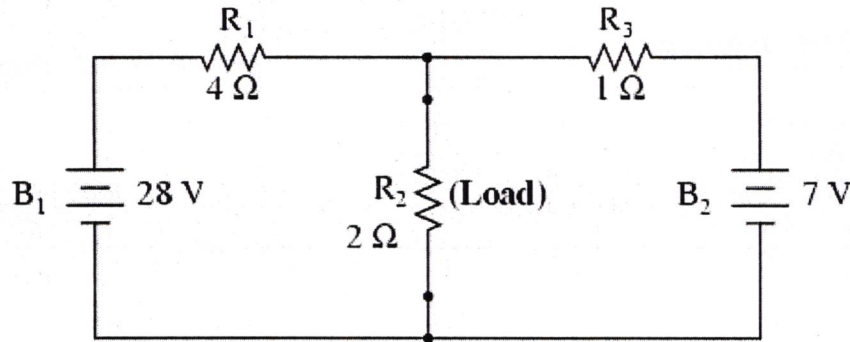
13. A. Find State and explain faraday's laws? 5M

B. Coil A and B in a magnetic circuit have 600 and 500 turns respectively. A current of 8A in coil A produces a flux of 0.04wb. If coefficient of a magnetic coupling is 2. Calculate i. self-inductance of coil A ii. Mutual inductance iii. Average induced EMF in coil B, when flux with it changes from zero to full value in 0.02sec. 5M

(OR)

14. Determine the Thevenin's equivalent for the figure

10M



15. Describe the working of a PN junction diode with neat diagrams. Also explain its V-I characteristics.

10M

(OR)

16. Draw V-I characteristics of Tunnel diode and explain it. 10M

17. Explain operation of Full-wave rectifier and also find Average value, RMS voltage and ripple factor. 10M

(OR)

18. The single-phase full bridge inverter has resistive load of $R=5\text{ohm}$ and dc input voltage is 24v. Determine rms output voltage at the fundamental frequency, output power. And the total harmonic distortion

10M

19. Explain the working of the CE configuration of a BJT

10M

(OR)

20. Discuss the V-I characteristics of n-channel MOSFET in detail

10M