



I B. Tech I SEM REGULAR EXAMINATION – DECEMBER 2018

BASIC ELECTRICAL ENGINEERING (COMMON TO ECE, CSE & IT)

Time: 3hrs

Max.Marks:75

Note: This question paper contains two PARTS A and B.

PART A is compulsory which carries 25 marks. Answer all questions.

PART B consists of 5 questions. Answer all the questions.

PART - A

ANSWER ALL THE QUESTIONS

25 M

1. State ohm's law . 2M
2. State Superposition Theorem and give an example 3M
3. Define average and RMS values. 2M
4. Define apparent power, active power, reactive power and power factor. 3M
5. Define self inductance and mutual inductance. 2M
6. What are the losses in transformer? 3M
7. Write any two applications of capacitor start single phase induction motor. 2M
8. Define synchronous speed and slip of an induction motor. 3M
9. Define distribution factor. 2M
10. Why is armature winding stationary in an alternator. 3M

PART-B

ANSWER ALL THE QUESTIONS

5QX10M=50M

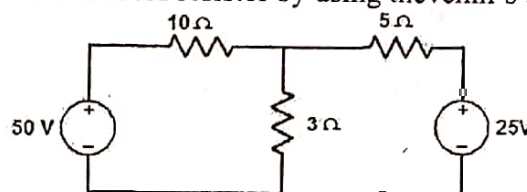
11. i) a) What are passive and active elements? Explain voltage – current relations of passive elements with example.

- b) Write down the expressions used in conversion of star to delta and delta to star transformations.

[OR]

- ii) a) State and explain Thevenin's theorem.

- b) Find the current in 10Ω resistor by using thevenin's theorem



12. i) a) Explain the steady state analysis of series RC circuit for sinusoidal excitation .

- b) Explain about three phase star connection and derive expression for voltage and current relationship.

[OR]

- ii) a) Explain the steady state analysis of series RLC circuit for sinusoidal excitation.

- b) Derive the RMS value and average value for a sinusoidal waveform and find form factor.

- 13.i) a) Explain about BH curve.

- b) With neat diagram discuss the principle of working of a transformer?

[OR]

- ii) a) State and explain faraday's laws of electromagnetic induction.

- b) Explain the procedure for conducting oc and sc test on a single phase transformer.

- 14.i) a) Explain constructional details of a Three phase induction motor with neat diagram.

- b) Explain working principle of a DC motor.

[OR]

- ii) a) Explain working principle of a capacitor start induction motor.

- b) Derive the EMF equation of a DC Machine.

- 15.i) a) Derive an expression for the distribution factor of an alternator.

- b) Discuss the constructional details of synchronous generator.

[OR]

- ii) a) Discuss about the battery backup and its applications.

- b) Explain the various types of batteries

V.JIT(A)