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Question Paper Code: 31231

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2016

Second Semester

Civil Engineering

01UEE206 - BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

(Common to Mechanical Engineering)

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

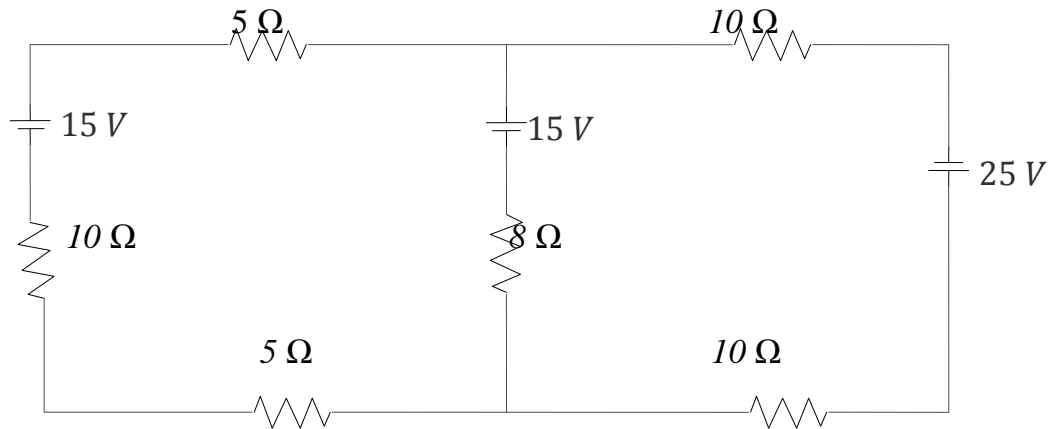
1. State Kirchhoff's law.
2. What are the advantages of electromechanical measuring instruments?
3. Why single phase induction motor is not a self starting?
4. Give importance of commutator in D.C machine.
5. Compare PN junction diode and Zener diode.
6. State the advantage of bridge rectifier.
7. Prove that $A + \overline{AB} = A + B$.
8. What is decade counter?
9. Sketch the block diagram of basic communication system.
10. Define the term modulation.

PART - B (5 x 16 = 80 Marks)

11. (a) Briefly explain the construction and working of attraction type moving iron instrument. (16)

Or

- (b) Use mesh analysis to determine the current in 8Ω resistor as shown in the circuit diagram. (16)



12. (a) Define transformer. Explain the construction of various types of transformer in detail and derive the emf equation of the transformer. (16)

Or

- (b) Why single phase induction motor is not self starting? With the help of neat sketches, explain the construction and principle of split phase induction motor and shaded pole induction motor. (16)

13. (a) With help of relevant circuit diagram explain the V-I characteristics of Zener diode (16)

Or

- (b) What are the different types of BJT configurations? Explain in detail the common emitter configuration with its input and output characteristics and also define h_{ie} , h_{oe} , h_{fe} , and h_{re} for the same. (16)

14. (a) Explain with neat sketches the output waveform of 4 bit synchronous counters and draw the logic diagram with the help of truth table. (16)

Or

- (b) What are the different types of A/D converters? Explain in detail the operation of successive approximation type A/D converter. (16)

15. (a) What is meant by Amplitude modulation? Explain also the connected terms modulation index, AM wave equation and frequency spectrum. (16)

Or

- (b) Write short notes on

(i) TV Transmitter

(ii) TV Receiver

(16)