

Reg. No. :

**Question Paper Code : 80042**

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2019.

Second Semester

Computer Science and Engineering

BE 8255 – BASIC ELECTRICAL, ELECTRONICS AND MEASUREMENT  
ENGINEERING

(Common to Information Technology)

(Regulation 2017)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. An Inductive circuit has an inductance of 0.4 Henry and takes a current of 0.5 Amp when connected to 200V, 50Hz supply. Determine the resistance of the circuit.
2. State Thevenin's theorem and draw its equivalent circuit.
3. What is Stepper Motor?
4. Define All Day Efficiency of a Transformer.
5. How does the sodium vapour lamp works?
6. What are Renewable energy sources?
7. Why do BJT's are called Bipolar transistors?
8. Distinguish between Zener breakdown and Avalanche breakdown.
9. Compare moving coil and moving iron instruments based on any two salient features.
10. What is the basic requirement of a transducer?

PART B — (5 × 13 = 65 marks)

11. (a) In the circuit shown in figure (i), find the current in the load resistance  $R_L = 200 \Omega$ . (13)

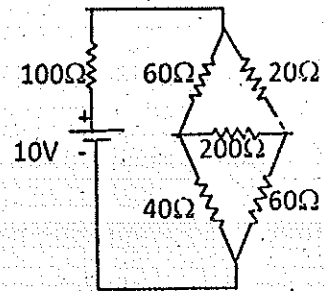


Fig. (i)

Or

- (b) Consider a resistive circuit having two meshes with one voltage source in each mesh and derive the steps involved in solving through
- (i) Mesh analysis (6)
  - (ii) Superposition theorem. (7)

12. (a) Explain the principle of operation of DC motor and derive its torque equation. (13)

Or

- (b) With a neat diagram explain the construction and working principle of Transformer. (13)

13. (a) Describe the various components of the Refrigerator in detail. (13)

Or

- (b) (i) What is the importance for Earthing, Fuses and Circuit breaker in an electrical circuit? (6)
- (ii) Discuss the working of the circuit breaker. (7)

14. (a) (i) What is Maximum forward current and Peak inverse voltage in a PN junction Diode? (4)
- (ii) Discuss the VI characteristics of zener diode. (9)

Or

- (b) What are the essential functions of analog DAC? Discuss in detail the R-2R Ladder-type DAC. (13)

15. (a) With a neat sketch explain the construction and principle of operation of Energy meter. (13)

Or

- (b) Write short notes on :
- (i) LVDT (7)
  - (ii) LDR. (6)

PART C — (1 × 15 = 15 marks)

16. (a) Construct the resistive circuit on your own and assign the values of resistances and voltages. Evaluate the current in the load resistor (assume) of the circuit using Thevenin's theorem and compare the result using mesh analysis technique (by direct inspection). (15)

Or

- (b) How does the tariff support energy efficiency and demand-side management? Explain in detail. (15)