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Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 31467

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

Second Semester

Civil Engineering

GE 2151 /EE 26/EE 1153/10133 EE 206/080280011 — BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

(Common to Aeronautical, Automobile, Marine, Mechanical, Production, Chemical Petroleum Engineering Biotechnology, Polymer, Textile, Textile (Fashion), Plastic Technology, Environmental Engineering, Geoinformatics Engineering, Industrial Engineering, Industrial Engineering and Management, Manufacturing Engineering, Material Science and Engineering, Mechanical and Automation Engineering, Mechatronics Engineering, Petrochemical Engineering, Chemical and Electrochemical Engineering, Petrochemical Technology, Pharmaceutical Technology and Textile Chemistry)

(Regulation 2008/2010)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — ($10 \times 2 = 20$ marks)

1. Two resistances of 4 Ω and 6 Ω are connected in parallel across 10 V battery. Determine the current through 6 Ω resistance.
2. Define RMS value.
3. Write the principle of DC motor.
4. What is meant by Transformation Ratio?
5. Give the applications of Zener Diode.
6. What are the different modes of Transistor operation?
7. What are the basic properties of Boolean algebra?
8. Write a short note on counters.
9. What is meant by Modulation?
10. Write the advantages of Optical Fibre communication.

PART B — (5 × 16 = 80 marks)

11. (a) Using Mesh Analysis, find the current through various branches in the circuit of figure 11 a. (16)

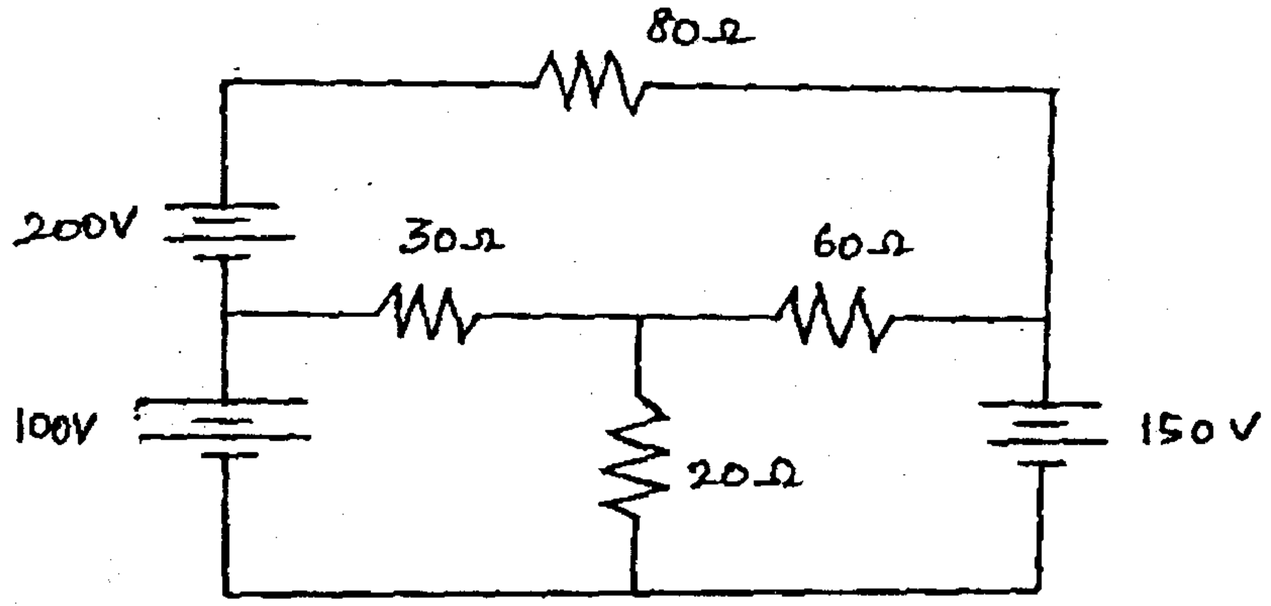

Figure 11 (a)

Or

(b) Derive the expression for phase angle in the R-L series circuit R-C series circuit and R-L-C series circuit. (16)

12. (a) Explain the construction and working Principle of DC Generator with neat diagram. (16)

Or

(b) Explain the working principle of various types of Single Phase (1ϕ) Induction Motor with neat diagram. (16)

13. (a) Explain the working principle of Half wave and Full wave rectifier with neat waveform. (16)

Or

(b) Explain various characteristics of BJT in Common Emitter configuration with neat diagram. (16)

14. (a) Explain in detail about D–Flip-Flop, T– Flip-Flop and JK Flip-Flop. (16)

Or

(b) Explain working principle of D/A and A/D converters. (16)

15. (a) Explain the Principles of Amplitude Modulation and Frequency Modulation. (16)

Or

(b) Explain the configuration of Satellite communication with neat diagram. Give its merits and Demerits. (16)