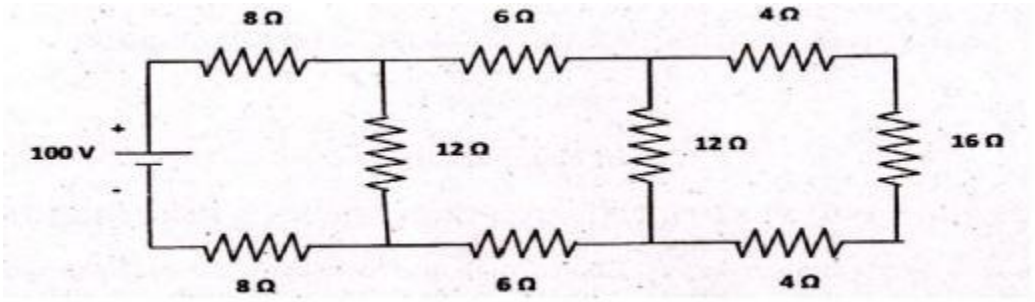
Part B & Part C Questions

Unit 1

1. Problems on Kirchoff's Law- Mesh Loop analysis
2. Explain the construction and working of an energy meter
3. Explain the construction and principle of operating a single phase energy meter.
4. Draw and explain the working principle of attraction type, repulsion type moving iron instruments and derive its deflecting torque.
5. Calculate (i) equivalent resistance across the terminal of the supply ii) total current supplied by the source, iii) power delivered to the 100V battery of the circuit shown below.
6. 

7. Explain the construction and working of dynamometer type wattmeter. Mention its merits and demerits.
8. With the help of diagrams, explain the construction and working principle of permanent magnet moving coil instruments. obtain the expression for its deflecting torque
9. An alternating voltage is given by V=230sin314t.Calculate i) frequency, ii) maximum value, iii) average value, iv) RMS value. (N/D-2016)

Answer: i) Frequency F = 1 /T =43.5 Hz ii) Maximum value Vm =Vrms/2 = 230 /2 =115 V iii) Average value:35.6V iv) RMS value = Avg value / form factor =35.6 / 1.11 = 32.07 V

Unit 2

- With a neat circuit diagram Explain the construction and principle of operation of DC Generator
- With a neat circuit diagram Explain the construction and principle of operation of DC Motor
- Explain the construction, working principle of single phase Induction motor
- Describe various types self -excited of DC generator with their circuit layout.
- Explain the characteristics of dc shunt motor
- Explain the tests on a single phase transformer and develop an equivalent from the above tests
- Describe the construction details and working principle of single phase transformer
- Explain the different types of dc motor with a neat sketch.
- Explain the working principle of various types of single phase induction motor with neat circuit diagram

UNIT III-WIRING, GROUNDING AND SAFETY

- Explain general rules of wiring , Accessories and Materials used in the Electrical wiring
- Explain the types of wiring.
- Explain the conduit type of wiring
- Explain the Wiring layout of Residential building
- What is meant by grounding? Explain the types of grounding
- Explain the causes of electrical accidents. Also explain the accident prevention methods

UNIT IV- ANALOG ELECTRONICS

- Explain the construction, working principle and VI Characteristics of PN Junction Diode
- Explain the construction, working principle and VI Characteristics of Zener diode
- Explain the construction and working principle of NPN Transistor with characteristics
- Explain the construction and working principle of PNP Transistor with characteristics
- Explain Common emitter, Common Base and common collector configuration.
- Explain the construction and working principle of N channel and P Channel MOSFET,
- Explain a half wave rectifier with necessary waveforms.

- Explain full wave rectifier with necessary waveforms
- Explain full wave bridge rectifier with necessary waveforms
- Explain UPS with a block diagram
- Explain about Voltage regulators

Unit V- LINEAR AND DIGITAL ELECTRONICS

- Explain Inverting and Non-inverting Amplifiers with necessary diagrams
- Explain Applications of OP-AMP such as summer, clipper and clamper
- Explain the logic gates in details with Truth table
- Explain half adder and full adder
- Explain the types of flip flops
- Explain any one concept of Analog to digital converter
- Explain any one concept of digital to analog converter
- List the basic laws and theorems of boolean algebra with relevant expressions