22.4.19

Roll No. | | | | | | | | | |

B.E. (FULL TIME) DEGREE END SEMESTER EXAMINATIONS, APR/MAY 2019

MANUFACTURING ENGINEERING

SECOND SEMESTER – (REGULATION 2015)

EE7151– Basic Electrical and Electronics Engineering

Time: 3 hours Max. Marks: 100

Answer ALL Questions

Part – A (10 x 2 = 20 Marks)

1. Write down the limitations of Ohm's Law.
2. Two coils connected in series have a resistance of 18 Ω and when connected in parallel have a resistance of 4 Ω. Find the value of resistances.
3. Define form factor.
4. What are the advantages of three phase circuits?
5. What is meant by Back EMF?
6. Define Transformer ratio.
7. What is meant by avalanche breakdown?
8. Compare BJT and JFET.
9. Draw the block diagram of power supply circuits.
10. Write down the applications of comparator.

Part – B (5 x 13 = 65 marks)

11. a) Determine the currents I_1, I_2 and I_3 using mesh analysis shown in Fig.1. (13)

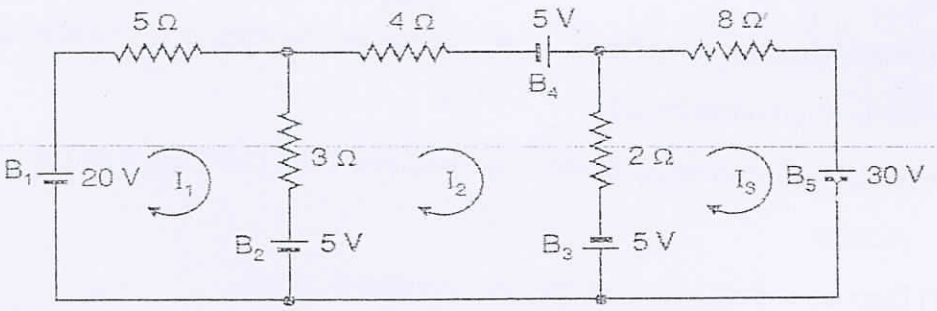

Fig.1

(OR)

b) Using Norton's Theorem, Find the current in 5Ω resistor in the circuit shown in Fig.2. (13)

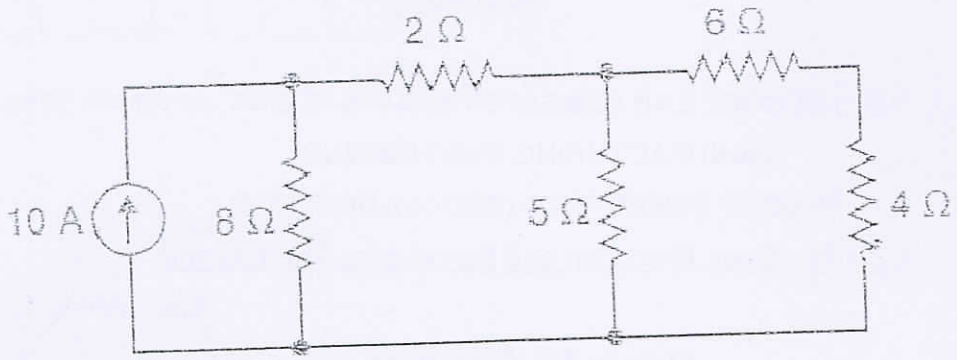

Fig.2

12. (a) (i) Determine the quality factor of a coil for the series circuit consisting of R=10Ω,L=0.1H, C=10μF (7)

(ii) Derive the expression for ideal parallel resonance circuits. (6)

(OR)

(b) How to measure power in three phase circuits using three and two wattmeter method.? (13)

13. (a) Discuss in detail about construction and working principle of a DC Generator with a neat diagram. Also derive the EMF equation. (13)

(OR)

(b) Explain in detail about working principle and construction of Transformer. Also Mention the advantages and disadvantages of transformer. (13)

14. (a) Discuss in detail about operation and characteristics of PN junction diode. (13)

(OR)

(b) i) Briefly explain the operation of BJT and characteristics of CC configuration. (8)

ii) Write short notes on UJT. (5)

15. (a) i) Explain in detail about construction and operation of full wave bridge rectifier. (7)

ii) Discuss in detail about clipper with a suitable circuit. (6)

(OR)

(b) Briefly explain summer and integrator using op-amp. (13)

Part – C (1 x 15 = 15 marks)

16. Find the current in 25Ω resistor in the Fig.3 when E=3V using Thevenin's theorem.

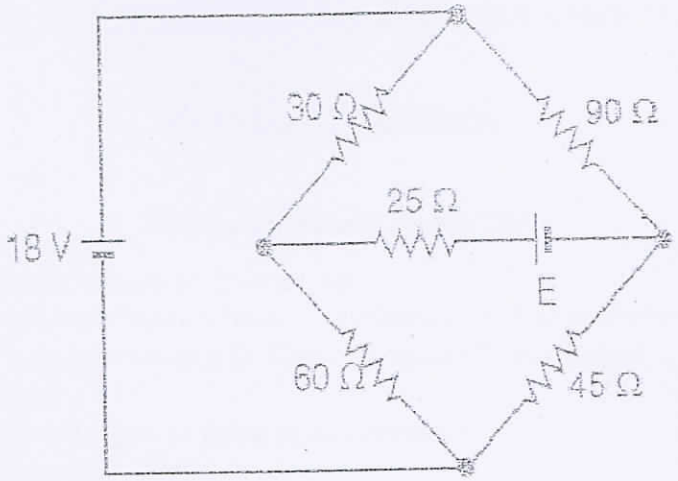

Fig.3