Q.24 Write down the expression of requivalent resistance for 'n'-number of resistors in parallel connection

Q25 How is energy stored in magnetic circuit? Explain with diagram.

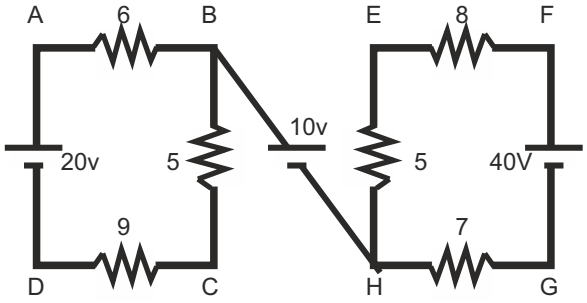
Q.26 Write short notes on material used for different electronic components.

Q.27 Explain Faraday's law of electromagnetic induction.

Q.28 Describe Biot-savart law.

Q.29 What are edgy current losses?

Q.30 For the circuit shows in Fig, Find VCE and VAG



Q.31 Explain the phasor representation of alternating voltage and current.

Q.32 Draw various types of DC motor circuits.

Q.33 How do thermo couples work? What is the material used for it?

Q.34 Describe diode and transistor functions.

Q.35 Describe temperature coefficient of resistance.

Section-D

Note: Long answer questions. Attempt any two question out of three Questions. (2x10=20)

Q.36 How a PN junction diode is working? Draw and explain V-I characteristics of PN diode with neat diagrams.

Q.37 Explain the working principle of various types of single phase induction motor with neat circuit Diagram.

Q.38 Derive the force on a current carrying conductor played in a magnetic field.

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4th Sem. / Branch : Aircraft maintenance
Subject : Elements of Electrical & Electronics Engineering-II

Time : 3 Hrs. M.M. : 100

SECTION-A

Note: Multiple type Questions. All Questions are compulsory. (10x1=10)

Q.1 A resistor has a resistance of 10- ohms and a voltage of 20 volts is applied across it. What is the current flowing through the resistor?

a) 0.5 amperes b) 2 amperes
c) 10 amperes d) 200 amperes

Q.2 What do Kirchoff's laws state?

a) The conservation of energy and momentum
b) The conservation of charge and energy
c) The conservation of charge and momentum
d) The conservation of current and voltage

Q.3 What is the Thevenin theorem used for in electrical circuits?

a) To calculate the equivalent resistance of a circuit
b) To simplify complex circuits into a single equivalent voltage source and resistance
c) To determine the power dissipation in a circuit
d) A analyze the behaviour of inductors in circuits

Q.4 What are the primary applications of semiconductor devices?

a) To generate mechanical energy
b) To convert ligh energy into electrical energy

c) To control the flow of electric current
d) To produce heat energy

Q.5 In which electronic component does a thyristor find its primary application?
a) Power supply circuit b) Audio amplifiers
c) Digital logic circuits d) Radio frequency circuits

Q.6 What happens to the charge stored in a capacitor if the voltage across it is doubled, assuming the capacitance remains constant?
a) The charge remains the same
b) The charge is halved
c) The charge is doubled
d) The charge quadruples

Q.7 Which of the following is not a magnetic material?
a) Iron b) Copper
c) Nickel d) Cobalt

Q.8 What is the analogy between electric and magnetic circuits?
a) Voltage is electric circuits is analogous to current in magnetic circuits
b) Current in electric circuits is analogous to flux in magnetic circuits
c) Resistance in electric circuits is analogous to inductance in magnetic circuits
d) Capacitance in electric circuits is analogous to permeability in magnetic circuits

Q.9 What is Lenz's law concerned with in electromagnetic induction?
a) It states the directions of the induced current in a circuit
b) It states the magnitude of the induced emf in a circuit
c) It states the direction of the magnetic field around a

current-carrying conductor
d) It states the conservation of energy principle in electromagnetic phenomena

Q.10 What is the primary factor affecting the rise and decay of current in inductors?
a) Resistance of the inductor
b) Capacitance of the inductor
c) Inductance of the inductor
d) Voltage across the inductor

Section-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

Q.11 Calculate the capacitance of a capacitor that store 40mC of charge and has a voltage of 2V.
Q.12 State Thevenins theorem.
Q.13 What is phase sequence?
Q.14 What do you mean by EMF?
Q.15 What do you mean by flux density?
Q.16 How does R-C circuit work?
Q.17 What is self-induced EMF?
Q.18 Write equation of alternation voltage.
Q.19 Where admittance method is used?
Q.20 What is the use of star connections?

Section-C

Note: Short answer type Question. Attempt any twelve questions out of fifteen Questions. (12x5=60)

Q.21 Explain Kirchoff's Law with an example.
Q.22 An Electric iron is rated 1000w, 240V. Find the current drawn & resistance of the heating element.
Q.23 Explain the relationship between electric and thermal energy.