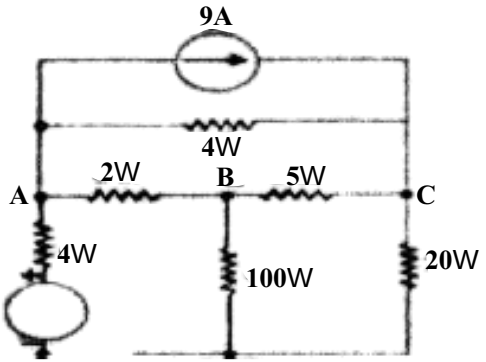
Q.28 Use nodal analysis to determine the voltage across 5 ohm resistance and the current in the I 2' V source.



Q.29 What are Variable Capacitors? Where are they used?

Q.30 Plot and explain VI curve for any circuit

Q.31 Sketch the O.C.C of dc shunt generator

Q.32 What is the significance of back EMF?

Q.33 A 230v, 50 Hz, is applied a series connected resistor 30 ohms and inductor 0.5mH, than find.XL, current through the circuit, voltage across each component, and also draw phasor diagram between current and voltage

Q.34 What is RMS value? Explain its importance

Q.35 A series RL circuit has a resistor 36Wand impedance of circuit is 10 W, then find power factor.

SECTION-D

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

Q.36 Draw and explain capacitive transducer in detail. Also mention its applications.

Q.37 What are the different types of Semiconductors? What are the different materials used inmanufacturing semiconductors?

Q.38 Describe DC motor and DC generator in details and diagrams.

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Roll No. .....

4th Sem./Branch : Aircraft Maintenance

Subject:- Elements of Electrical and Electronics Engineering- II

Time : 3Hrs. M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 What is the unit of electromotive force (EMF)?

a) Ohm b) Watt

c) Ampere d) Volt

Q.2 What is the effect of temperature on the resistance of a semiconductor like silicon?

a) The resistance increases with increasing temperature

b) The resistance decreases with increasing temperature

c) The resistance remains constant

d) The resistance fluctuates randomly

Q.3 What does Kirchoff's current law (KCL) state?

a) The sum of currents entering a junction is equal to the sum of currents leaving the junction

b) The sum of voltage drops around a closed loop in a circuit is zero

c) The sum of resistances in series is equal to the reciprocal of the sum of reciprocals of individual resistances

d) The sum of voltages in a closed loop equals the sum of currents multiplied by the resistance

Q.4 In a circuit with three voltage sources connected in series, if the voltages across each source are 10V, 15V, and 20V respectively, what is the total voltage across the circuit?

a) 5V b) 45V
c) 30V d) 45V

Q.5 Which semiconductor material is commonly used in the manufacturing of diodes and transistors?
a) Germanium b) Aluminum
c) Copper d) Silicon

Q.6 What is the primary function of a capacitor in an electrical circuit?
a) To generate electrical energy
b) To store and release electrical energy
c) To regulate voltage levels
d) To amplify electrical signals

Q.7 A capacitor with a capacitance of 20 μF is connected to a 50 V battery. What is the energy stored in the capacitor?
a) 500 J b) 50 J
c) 250 J d) 100 J

Q.8 What is the unit of magnetic flux density?
a) Tesla (T)
b) Ampere per meter (A/m)
c) Henry (H)
d) Weber (Wb)

Q.9 What is hysteresis loss in magnetic materials?
a) Loss of magnetization when an external magnetic field is removed
b) The energy lost due to the magnetization and demagnetization of a material
c) The maximum magnetic field intensity a material can withstand before losing its magnetization
d) The difference between the magnetic flux density and the magnetic field intensity

Q.10 What is the unit of inductance?
a) Ohm (Ω) b) Farad (F)
c) Henry (H) d) Tesla (T)

SECTION-B

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

Q.11 What is EMF and Volyage?

Q.12 Describe Lenz law?

Q.13 What is the function of NPN junction?

Q.14 What is a photo cell?

Q.15 What is the use of Si and Ge?

Q.16 What is the material used for resistor?

Q.17 What are transistors?

Q.18 Name two magnetic·materials?

Q.19 What is a photo cell?

Q.20 What is the main property of magnetic waves?

SECTION-C

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

Q.21 What is the effect of temperature on resistance of conductors?

Q.22 Describe the electric power parameters for AC and DC.

Q.23 Describe Kirchoffs Law.

Q.24 An alternating voltage is given by V=230sin3 1 4t. Calculate
i) frequency ii) maximum value
iii) averagevalue iv) RMS value.

Q.25 Explain phase wound rotor.

Q.26 What do you mean by alpha and beeta transistor?

Q.27 How is energy stored in magnetic circuit? Explain with diagram