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 In which device is the principle of statically induced emf used?
a) Transformer   b) Motor
c) Generator   d) Battery

Q.2 If the current changes from 3A to 5A in 2s and the emf is 10V. Calculate the inductance.
a) 10H   b) 20H
c) 30H   d) 40H

Q.3 Identify the material which is suitable for making standard resistors.
a) Silver   b) Copper
c) Constantan   d) Germanium

Q.4 KCL is based on the fact that
a) There is a possibility for a node to store energy
b) There cannot be an accumulation of charge at a node
c) Charge accumulation is possible at node
d) Charge accumulation may or may not be possible.

Q.5 Capacitor is a device used to_____
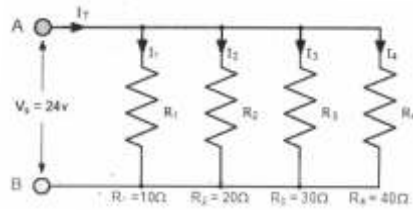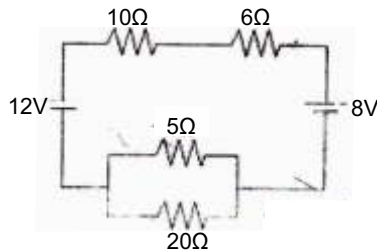a) store electrical energy
b) vary the resistance

Q.28

Q.29 What is RMS value? Explain its importance.

Q.30 What is the principal of working of a thermocouple?

Q.31 How much energy is consumed in a resistor?

Q.32 Describe Lenz law and its application.

Q.33 Explain the concept of mutual inductance.

Q.34 What do you mean by frequency ? How does it affect the circuits?

Q.35 Explain charging and discharging of capacitors?

SECTION-D

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

Q.36 Draw the phasor diagram for a series R-L-C circuit and explain the main features and uses associated with it.

Q.37 What are the different types of Semiconductors? Explain two devices working on semiconductors with characteristic curve.

Q.38 a) Explain Faraday's law.
b) Determine the electric current that flows in the circuit as shown in the figure below

c) store magnetic energy
d) dissipate energy

Q.6 What is the value of the form factor for sinusoidal current?

a) p/2 b) p/4
c) 2p d) p/Ö2

Q.7 Capacitor stores which type of energy?
a) kinetic energy b) vibrational energy
c) potential energy d) heat energy

Q.8 In an impedance parallel network, the reactive component will_____ the voltage by 90 degrees.
a) Lead
b) Lag
c) Either lead or lag
d) Depends on the circuits

Q.9 In an impedance parallel network, the reactive component will either lead or lag the voltage by _____degrees.
a) 0 b) 90
c) 45 d) 180

Q.10 The percentage of power increased from single phase to three phase is?
a) 50 b) 100
c) 150 d) 200

SECTION-B

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

Q.11 What is Dielectric?
Q.12 Describe Lenz law?
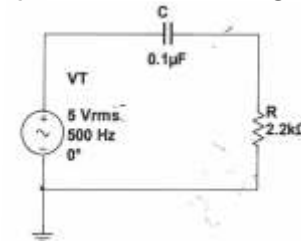Q.13 Give an important use of capacitors?

(2) 187743/147743

Q.14 What is thermocouple working principle?
Q.15 What is EMF?
Q.16 What is the material used for resistor?
Q.17 What are variable capacitors?
Q.18 What is static electricity?
Q.19 What is the phase difference between voltage and current?
Q.20 What are types of semiconductors?

SECTION-C

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

Q.21 What are the energy storing circuits?
Q.22 Highlight the major differences between AC and DC power.
Q.23 Find X_C, V_C V_R in the following circuit.

Q.24 What is the difference between Apparent Power and Reactive Power?
Q.25 In a series RL circuits , 12 V RMS is measured across the resistor, and 14 V rms is measured across the inductor. What is the peak value of the source voltage?
Q.26 Explain the phasor representation of alternating volatge and current.
Q.27 Calculate the individual branch currents and total current drawn from the power supply for the following set of resistors connected together in a parallel combination.

(3) 187743/147743