frequency of f= 50.0 Hz and the reactance is Z=R = 55.0Ω; Find the circuit's capacitance C (in F).

Q.30 What are edgy current losses?

Q.31 A 1.5 k ohm resistor and a coil with a 2.2 K ohm inductive reactance are in series across an 18 V AC source, Calculate the power factor.

Q.32 How does dynamically induced emf work?

Q.33 What are the advantages of three phase system over single-phase system?

Q.34 How do thermocouples work?

Q.35 Explain the working of Rheostat? What is its application?

SECTION-D

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

Q.36 A resistor, an ideal capacitor and an ideal inductor are connected in parallel to a source of alternating voltage of 160 V at a frequency of 250 Hz. A current of 2 A flows through the resistor and a current of 0.8 A flows through the inductor. the total current through the circuit is 2.5 A. Assess the resistance of the resistor, the capacity of the ideal capacitor and the inductance of the ideal inductor (Presume that IC > IL). Note : the assigned values of voltage and currents are the effective values.

Q.37 Describe the working of RL and RLC circuits, what are their applications and relative merits and demerit?

Q.38 What is EMF, explain the source of EMF its types and its relation with Voltage. Explain resonance in circuits.

4th Sem / 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 The total number of magnetic field lines passing through an area is termed as?
a) Voltage
b) EMF
c) Magnetic flux
d) Magnetic flux density

Q.2 In three phase system, the three voltages (currents) differ in phase by_____ electrical degrees from each other in a particular sequence.
a) 30 b) 60
c) 90 d) 120

Q.3 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.4 If either the inductance or the rate of change of current is doubled, the induced e.m.f ?

a) Remains constant b) Becomes zero
c) Doubles d) Becomes half

Q.5 For a coil having a magnetic circuit of constant reluctance, if the flux increases, what happens to the current?
a) Increases b) Decreases
c) Remains constant d) Becomes zero

Q.6 Do magnetic flux lines intersect?
a) Yes
b) No
c) Depends on the situation
d) Cannot be determined

Q.7 What is the current found by finding the current in an equidistant region and dividing by n?
a) RMS current b) Average current
c) Instantaneous current d) Total current

Q.8 Average value of current over a half cycle is?
a) 0.671m b) 0.331m
c) 6.71m d) 3.31m

Q.9 Capacitor preferred when there is high frequency in the circuits is_____
a) Electrolyte capacitor
b) Mica capacitor
c) Air capacitor
d) Glass capacitor

Q.10 A power factor of a circuit can be improved by placing which, among the following, in a circuit?
a) Inductor b) Capacitor
c) Resistor d) Switch

SECTION-B

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

Q.11 What are the units of electric power and energy?
Q.12 What is resistivity?
Q.13 What does Kirchoff law depict?
Q.14 What is the difference between EMF and Voltage?
Q.15 What do you mean by a semiconductor?
Q.16 What happens to capacity of capacitors in parallel?
Q.17 What is Hysteresis?
Q.18 How much energy can be stored in a magnetic circuit?
Q.19 What is the use of Superposition theorem?
Q.20 Write relation between voltage and current?

SECTION-C

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

Q.21 Explain rise and decay of current in inductors?
Q.22 What is the force on a current carrying conductor in magnetic field?
Q.23 Explain the analogy between electric and magnetic circuits.
Q.24 Explain eddy current and its effects.
Q.25 Explain the different types of voltages.
Q.26 What are the material used for different electronic components?
Q.27 What is the necessary application of RLC circuit?
Q.28 What is the difference between star and delta circuits?
Q.29 A series RLC circuit has resistance R=55.0Ω and inductance L =0.755 H. The voltage source operates at a