Q.29 Derive an expression for a force on a current carrying conductor placed in a magnetic field.

Q.30 What are the advantages of Electrical Energy over other forms of energy?

Q.31 Explain the addition and substraction of alternating quantities.

Q.32 State and explain Faraday's law of electromagnetic induction.

Q.33 Write a short note on " Measurement of power using two wattmeter method".

Q.34 Define the form factor and peak factor.

Q.35 Draw and explain the phasor diagram for R-L series circuit.

SECTION-D

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

Q.36 Explain power and power factor in ac circuits. State disadvantages of low power factor.

Q.37 Write short note on any two of the following:

a) Statically and dynamically induced e.m.f.

b) Self and mutually induced e.m.f.

c) Energy stored in an inductor

Q.38 Give expression of impedance, Phase angle, power factor of single - phase ac supply delivering power to RLC series circuit.

Roll No. .....

2nd Sem /Elect, Power Stat. Engg.Elect. & Eltx Engg. / Fire Tech & Safety

Subject:- Fundamentals of Electrical Engineering

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 Alternating flux is produced by _____ supply.

a) D.C. b) A.C.

c) Both a and b d) None of these

Q.2 Unit of power is

a) Volt b) Ampere

c) Watt d) Ohm

Q.3 Equivalent resistance of two resistance 50 Ohm each in parallel is

a) 0 b) 5

c) 10 d) 25

Q.4 In a secondary cell, chemical reaction taking place are

a) Reversible b) Irreversible

c) Both d) None of the above

Q.5 Average emf of Nickle & cadmium cell is

a) 1.0 V b) 1.2 V

c) 1.8 V d) 2.0 V

Q.6 The power factor of a D.C. circuit is always

a) 0 b) Less than unity

c) Unity d) More than unity

Q.7 The specific gravity of acid is checked with the help of a

a) Hydrometer b) Hygrometer
c) Lectometer d) Cell tester

Q.8 In a balanced three phase load, Each phase has

a) Equal amount of power
b) One third of total power
c) Two third of total power
d) None of the above

Q.9 The power factor of an electrical circuit is equal to

a) R/Z
b) Cosine of phase angle difference between current and voltage
c) Ratio of useful current to total current
d) All above

Q.10 The induced e.m.f. of a moving conductor coil can be measured using the following law:

a) Lenz's law b) Faraday's law
c) Coulomb's law d) Ampere's law

SECTION-B

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

Q.11 KWh is the unit of _____.

Q.12 Two resistances of value 7 ohm & 5 ohm are connected in series, what is the total equivalent resistance of the series combination _____?

Q.13 What is the unit of potential difference _____?

Q.14 Power factor=Active power/ _____?

Q.15 Neutral point is available in _____ (Star/Delta).

Q.16 Define magnetic flux.

Q.17 What is the frequency of AC supply used in India _____?

Q.18 Define primary cell.

Q.19 In a 3-phase system the phase difference between the two adjacent e.m.f.s is _____.

Q.20 State Lenz's law.

SECTION-C

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

Q.21 Explain Krichoff's law of current and voltage.

Q.22 Discuss the advantages of poly phase system over single phase system.

Q.23 What are the applications of electricity?

Q.24 What is the principle of self and mutual induction?

Q.25 Write a short note on "Magnetic field across solenoid".

Q.26 Explain any five points about care & maintenance of lead acid battery.

Q.27 What is the relation between phase voltage & line voltage, phase current & line current in star and delta connections?

Q.28 What do you mean by ideal voltage and current source?