Q.27 Write a short note on different forms of energy.

Q.28 Draw a circuit diagram to measure voltage, current, power and electrical Energy in an AC circuit.

Q.29 Find the expression for energy stored in an conductor.

Q.30 Write the points on care and maintenance of lead acid batteries.

Q.31 Explain power and power factor in a 3phase circuits.

Q.32 What is difference between AC and DC supply?

Q.33 Give advantages of electrical energy over other forms of energy.

Q.34 Define power factor and what are the disadvantages of low power factor?

Q.35 Discuss B-H curve.

SECTION-D

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

Q.36 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)   Fleming left hand rule

Q.37 Compare star and delta connection of 3-phase connection and drive relationship between Phase voltage and line voltage, Phase current and line current in star and delta Connections?

Q.38 Explain Working, principle, construction and applications of lead acid batteries.

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 The resistance of wire varies inversely as
   a)   area of cross-section b)   length
   c)   resistivity   d)   temperature

Q.2 In left hand rule, thumb always represents
   a)   voltage
   b)   magnetic field
   c)   current
   d)   direction of force on conductor

Q.3 The shape of DC is
   a)   straight horizontal line
   b)   square wave
   c)   sine wave
   d)   triangular wave

Q.4 The area of his hysteresis loss is a measure of
   a)   permitivity   b)   susceptance
   c)   energy loss per cycle d)   magnetic flux

Q.5   In secondary cell, chemical reaction taking place are
    a)   reversible   b)   irreversible
    c)   both   d)   none of the above

Q.6   The eddy current loss in the transformer is reduced by
    a)   reducing the resistance of core
    b)   using laminated core
    c)   both (a) and (b) correct
    d)   not possible of reduce

Q.7   The property of coil by which a counter e.m.f is induced in it when the current through the coil changes is known as
    a)   self inductance   b)   mutual inductance
    c)   conductance   d)   admittance

Q.8   If two wattmeter method of measuring power in balanced 3-phase circuit, if the Readings of two wattmeters are equal but opposite in sign, then the power factor of the load is
    a)   unity   b)   1/2
    c)   zero   d)   0.5

Q.9   Admittance is the reciprocal of
    a)   impedance   b)   inductance
    c)   susceptance   d)   reactance

Q.10   Current is measured in
    a)   tesla   b)   ohm
    c)   ampere   d)   volt

SECTION-B

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

Q.11   Define resistance.
Q.12   Draw delta connection.
Q.13   Tesla is the unit of _____
Q.14   Main points of improved power factor.
Q.15   Define conductance.
Q.16   Neutral point is available in _____ (star/delta)
Q.17   What is the frequency of AC supply used in India _____?
Q.18   In a 3-phase system the phase difference between the two adjacent e.m.f.s is _____
Q.19   In star connection, line voltage V_L= _____
Q.20   What is electromagnetism?

SECTION-C

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

Q.21   Explain kirchhoff's law of current and voltage.
Q.22   What do you mean by ideal voltage and current source?
Q.23   Write short note on "magnetic field across solenoid"?
Q.24   Derive an expression for a force on a current carrying conductor placed in a Magnetic field.
Q.25   State and explain Faraday's law of electromagnetic induction.
Q.26   Draw and explain the phasor diagram for R-L series circuit.