Q.28 Define power factor and its importance.   (CO-6)

Q.29 State the maximum power transfer theorem. Show that for maximum power transfer when $R_1 = R_{TH}$.   (CO-2)

Q.30 Draw and explain the B-H loop.   (CO-4)

Q.31 Describe the basis features of balanced 3 phase system.   (CO-8)

Q.32 Determine phase angle relationship between alternating voltage and current in a purely inductive circuit.   (CO-7)

Q.33 Derive an expression for the energy stored in the magnetic field of a coil possessing an inductance of L. Henry when the current flowing through it is 1amperes.   (CO-6)

Q.34 Derive an expression for the instantaneous value of alternating voltage varying sinusoidally.   (CO-7)

Q.35 Explain the charging method for lead acid accumulator.   (CO-3)

SECTION-D

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

Q.36 Drive the relationship between line voltage and line current with phase voltage and phase current in Death connected circuit.   (CO-8)

Q.37 Explain Real Power. Reactive Power and Apparent Power with the help of Power triangle in case of RLC series circuit.   (CO-7)

Q.38 Explain the hysteresis loop and hystersis Loss.   (CO-4)

3rd Sem. / Electrical GE, Power Station Engg., Elect. & Eltx. Engg.

Subject : Fundamentals of electrical Engineering

Time : 3 Hrs.   M.M. : 100

SECTION-A

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

Q.1 The form factor is the ratio of   (CO-7)
  a) Average value to rms value
  b) rms value to average value
  c) Peak value to average value
  d) Peak value to rms value

Q.2 A current is said to be alternating when it changes in   (CO-7)
  a) Magnitude only
  b) Direction only
  c) Both magnitude and direction
  d) None of the above

Q.3 The unit of electrical energy is   (CO-5)
  a) Watt-sec   b) Joule
  c) kWh   d) All of the above

Q.4 Area of hysteresis loop represents   (CO-4)
  a) Copper loss   b) Eddy current loss
  c) Hysteresis loss   d) Iron loss

Q.5 The resistance of wire varies inversely as (CO-1)
  a) Area of cross-section
  b) Length
  c) Resistivity
  d) Temperature
Q.6 The venin's resistance R_{TH} is determined (CO-2)
  a) By short-circuiting the given two terminals
  b) By removing the voltage sources along with their internal resistance
  c) Between same open terminals as for V_{TH}
  d) Between any two open terminals
Q.7 The frequency of an alternating quantity is (CO-7)
  a) The speed with which the alternator runs
  b) The number of direction reversals in per second
  c) The number of cycles completed per second
  d) The number of cycles completed per minutes
Q.8 Cells are connected in series in order to increase the (CO-3)
  a) Current capacity   b) Life of the cells
  c) Voltage rating   d) Terminal voltage
Q.9 IN a 3-phase, balanced load, the power consumed is given by the relation. (CO-8)
  a) $\sqrt{3} V_L 1_L \cos\Phi$ b) $3 V_{PH} 1_{PH} \cos\Phi$
  c) Both (a) and (b)   d) None of the above
Q.10 In two-wattmeter method of 3-phase power measurement in balanced load having 0.5 p.f. lagging. (CO-8)
  a) One wattmeter reads zero
  b) One wattmeter reads down scale
  c) Both the wattmeters read equally
  d) Both the wattmeters give equal but opposite readings.

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SECTION-B
Note: Objective type questions. All questions are compulsory. (10x1=10)
Q.11 Define valtage and its unit. (CO-5)
Q.12 Draw a parallel circuit having three resistances RI, R2 and R3 connected across a supply voltage V volt. (CO-8)
Q.13 Define Secondary cell with one example. (CO-7)
Q.14 Define eddy current. (CO-2)
Q.15 Define phase. (CO-7)
Q.16 Write the unit of frequency? (CO-7)
Q.17 Give the unit of Inductive reactance. (CO-4)
Q.18 Weber is the SI unit of _____. (CO-5)
Q.19 All the domestic appliances are connected in _____ with the circuit. (CO-2)
Q.20 Draw a phasor diagram of R-C series circuit. (CO-4)

SECTION-C
Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)
Q.21 Explain series and parallel connection of inductances. (CO-1)
Q.22 Differentiate between primary and secondary cells. (CO-3)
Q.23 Diferentiate between AC and DC? (CO-4)
Q.24 State the faraday's Law's of Electro magnetic induction. (CO-7)
Q.25 State and explain the Thevenin's theorem. (CO-4)
Q.26 List five uses of electrical energy. (CO-6)
Q.27 State Kirchhoff's Voltage law and current law? (CO-2)

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