Q.29 What are the various losses in a transformer? Where they occur?

Q.30 Explain the principle of hydropower plant?

Q.31 Explain the equation sinusoidal wave form with derivation?

Q.32 Define the following

a) Conductance
b) Susceptance
c) Admittance

Q.33 Explain in brief different losses in transformer.

Q.34 Explain power triangle in R-L series circuit.

Q.35 Give similarities between electric circuit and magnetic circuit.

SECTION-D

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

Q.36 Define the following

a) Frequency b) Time period
c) R.M.S value d) Form factor
e) Peak factor

Q.37 What is open circuit and short circuit test for a transformer? explain briefly.

Q.38 Explain the series circuit when alternating supply is applied across it and also draw it's phasor diagram.

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3rd Sem / Mechatronics
Subject:- Electrical Engineering Fundamentals / Basic Elect. Engg.

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 The mmf of magnetic circuit is analogous to

a) Current b) emf
c) resistance d) Power

Q.2 The direction of electro magnetically induced emf is determined by

a) Fleming's right hand rule
b) Lenz's law
c) right hand thumbrule
d) fleming's left hand rule

Q.3 The standard supply of frequency in India is

a) 25hz b) 50Hz
c) 60Hz d) 100Hz

Q.4 In a conductor the magnitude of induced emf depends upon the

a) Flux density of their magnetic field
b) rate of change of flux linkage
c) Amount of flux cut
d) Amount of flux linkage

Q.5 The time period of alternating quantity is the time required for it to complete one____

a) cycle b) Frequency
c) time period d) peak cycle

Q.6 When a resistance of 460 ohms is connected across 230 volts supply. The current flowing through the resistance is

a) 0.5 A b) 1.0 A
c) 1.5 A d) 2A

Q.7 The rate at which electrical energy is consumed in an electrical circuit is called

a) electrical voltage b) electric current
c) electrical energy d) Electrical power

Q.8 A current is said to be alternating when it changes in

a) Magnitude only
b) direction only
c) both magnitude and direction
d) None of above

Q.9 Open circuit test on a transformer gives

a) Hysteresis loss
b) Eddy current loss
c) Copper loss
d) Some of hysteresis and eddy current losses

Q.10 Expand MCB

a) Main circuit breaker
b) Multiple circuit breaker
c) Miniature circuit breaker
d) None of the above

SECTION-B

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

Q.11 Define frequency?
Q.12 Define efficiency of a transformer?
Q.13 Define voltage and it's unit?
Q.14 What are nuclear power stations?
Q.15 State the norton's theorem?
Q.16 What is the Emf equation of the transformer?
Q.17 Draw the symbol of current source?
Q.18 Draw the wave shape of alternating current (al) ?
Q.19 What is conductance?
Q.20 Define transformer.

SECTION-C

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

Q.21 State the faraday's law of electromagnetic induction?
Q.22 Write the difference between AC and DC.
Q.23 Write the working principle of transformer with diagram.
Q.24 Draw the block diagram of hydro power station.
Q.25 What is max. power transfer theorem state and explain.
Q.26 Drive the emf equation of the transformer.
Q.27 What is power factor and what are its different significance.
Q.28 Define mutual induced emf and explain it briefly.