Q.26 Write down advantages and disadvantages of a servo motor?
Q.27 What is the reason behind the lamination of stator in an induction motor?
Q.28 State the concept and uses of micrometers.
Q.29 What is the use of current transformer, explain its working with constructional details.
Q.30 How commercial efficiency is different from all-day efficiency of a transformer?
Q.31 Stater is necessary to operate a DC machine. why?
Q.32 On which principle single phase motors are operated? Explain it.
Q.33 Write a short note on commutator type single phase motors .
Q.34 What is the need of damper winding in synchronous motors?
Q.35 What is reluctance and write down its importance in synchronous motor?

SECTION-D

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

Q.36 Derive the relationship between phase voltage and line voltage in a star configuration of three phase supply.
Q.37 Explain the constructional details of different types of single phase induction motors.
Q.38 Explain the construction and working theory of a steppe motor with its two applications.

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3rd Sem / Eltx, EI, IC, Medical Eltx (5th Sem)
Power Eltx, Elct. & Eltx. Engg.
Subject:- Electrical Machines

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 Primary winding of a transformer_____
a) Could either be a low voltage or high voltage winding
b) Is always a high voltage winding
c) Cannot be determined
d) Is always a low voltage winding

Q.2 Back emf in case of synchronous motor depends on the
a) Excitation given to the field winding
b) Speed
c) Both (A) and (B)
d) None of the above

Q.3 What are the two main types of servo motors?
a) AC and DC
b) Stepper and brushless
c) Permanent magnet and variable reluctance
d) Linear and rotary

Q.4 An ideal transformer will have maximum efficiency at a load such that
a) Copper loss > iron loss
b) Cannot be determined
c) Copper loss = iron loss
d) Copper loss < iron loss

Q.5 What is the mechanical power developed by a DC series motors is maximum?
a) Back emf is equal to half the applied voltage
b) Back emf is equal to the applied voltage
c) Back emf is equal to zero
d) None of above

Q.6 Rotor rotates in which direction in a three-phase induction motor?
a) In the clockwise direction only
b) In the direction of RMF
c) In the anticlockwise direction only
d) Depends on Load

Q.7 A DC series motor is best suited for electric traction:
a) Lathe b) machine Tool
c) Crane d) Constant speed load

Q.8 A DC generator without commutator is a
a) AC generator b) DC motor
c) DC generator d) Induction motor

Q.9 A machine that converts electrical energy into mechanical energy is called
a) Generator b) Motor
c) Both (a) and (b) d) None of these

Q.10 Core of a transformer is generally made of:
a) Mild steel
b) Silicon steel
c) Cast iron
d) Non magnetic material

SECTION-B

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

Q.11 What is mean by single phase motor ?
Q.12 What is power factor?
Q.13 Define instrument transformer.
Q.14 What is Lenz law?
Q.15 What is magnetic flux?
Q.16 Define EMF in a coil.
Q.17 Write basic principle of a motor.
Q.18 What is the need of shaft in a DC machine?
Q.19 What is mean of armature winding?
Q.20 How do we can control speed of a DC servo motor?

SECTION-C

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

Q.21 Write three differences between a servo motor and a stepper motor.
Q.22 Write down different applications of a DC motor.
Q.23 Why core sheets are laminated and classify the transformer on the basis of core construction ?
Q.24 State the Farady's law of electromagnetic induction.
Q.25 What is torque and how it is produced with the help of two magnetic fields?