181535/171035
/121035/031035

3rd Sem / Branch : Eltx. EI, IC, Med.Eltx (5th sem), Powe Eltx, Elect & Eltx Engg

Subject:- Electrical Machines

Time : 3Hrs.   M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory

(10x1=10)

Q.1   The primary and secondary of a transformer are_____coupled but_____ connected

(CO1)

a)   magnetically, not electrically
b)   electrically, not magnetically
c)   magnetically, also magnetically
d)   electrically, also electrically

Q.2   The voltage regulation for transformer is given by_____   (CO3)

a)   (E2-V2)/E2   b)   (E2-V2)/V2
c)   (V2-E2)/E2   d)   (V2-E2)/V2

Q.3   Maximum efficiency of a transformer for a constant load current, occurs at_____   (CO5)

a)   at any p.f   b)   zero p.f leading
c)   zero p.f lagging   d)   unity p.f

Q.4   The shunt motor starters that can be used is / are_____

(CO8)

a)   3-point and 4-point starter
b)   5-point starter
c)   4-point starter
d)   5-point and 3 -point starter

Q.5   Two of the supply terminals to a three phase induction motor gets interchanges while regular scheduling work. When the machine is switched on, then it will

(CO6)

a)   rotate in same direction
b)   rotate in opposite direction
c)   not start
d)   get heated and winding will burn

Q.6   Slip is defined as_____(Ns as the synchronous speed and Nr is the rotor speed)   (CO5)

a)   Nr-Ns/Ns   b)   Ns-Nr/Nr
c)   Ns-Nr/Ns   d)   Ns-Nr

Q.7   Starting method applicable of both squirrel-cage and slip ring induction motors is/are_____ A. DOL starting B. Auto transformer starting C. Rotor resistance starting

(CO8)

a)   A,B,C   b)   A, B
c)   B, C   d)   A, C

Q.8   Synchronous motor delivers lagging power at_____

(CO5)

a)   leading pf   b)   lagging pf
c)   zero pf   d)   unity pf

Q.9   A single phase induction motor can be   (CO6)

a)   Capacitor start motor
b)   Capacitor Run motor
c)   Capacitor start and capacitor run motor
d)   All of the above

Q.10 Two wattmeter used to measure power in a three phase style, read W1 and W2 respectively. Total power will be_____   (CO1)

a)   W1+W2   b)   W1-W2
c)   W2-W1   d)   W1+W2/W1W2

SECTION-B

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

Q.11 Core of a transformer is laminated to reduce_____
(CO7)

Q.12 A machine that converts mechanical energy into electrical energy is called_____ (CO6)

Q.13 In synchronous motor both rotor and stator fields rotate at_____ speed. (CO7)

Q.14 Define Delta connection. (CO1)

Q.15 Define Fleming's Left Hand Rule. (CO3)

Q.16 Define commutator. (CO6)

Q.17 The speed of a DC motor is always constant. (True/False) (CO6)

Q.18 State application of commutator type single phase motors. (CO6)

Q.19 Define servo motors? (CO3)

Q.20 List two types of stepper motors. (CO7)

SECTION-C

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

Q.21 What are the advantages of three phase system over single phase system. (CO2)

Q.22 Draw a three phase star connected system showing line and phase voltage. (CO1)

Q.23 Describe specifications of transformers. (CO2)

Q.24 Explain the working principle of transformer. (CO2)

Q.25 Define efficiency and give condition for maximum efficiency of transformer. (CO5)

Q.26 Explain the function of Cooling Tubes and Silica Gel Breather. (CO3)

Q.27 Explain with neat sketches how torque is developed due to alignment of two fields when electromagnet is placed in the magnetic field. (CO3)

Q.28 Give the starting method of DC motor in brief. (CO8)

Q.29 Explain various types of single motor in brief. (CO7)

Q.30 List the factors that affect speed of a dc motor. (CO4)

Q.31 Explain the function of DOL starter? (CO6)

Q.32 Explain current transformer. (CO3)

Q.33 Explain working principle of a three phase induction motor. (CO7)

Q.34 Explain the characteristics of DC shunt motor. (CO3)

Q.35 Explain the function of starter for a dc motor. (CO3)

SECTION-D

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

Q.36 What is power factor? Explain two wattmeter method of power and power factor measurement in detail. (CO4)

Q.37 What is servo motor? Explain various types of servo motors. (CO7)

Q.38 Explain the construction and working of synchronous motor. (CO5)

(**Note:** Course outcome/CO is for office use only)