

Enrollment No: _____

Exam Seat No: _____

C.U.SHAH UNIVERSITY

Winter Examination-2015

Subject Name : Electrical Machine II

Subject Code 2TE04EMC1

Branch :Electrical Engineering (Diploma)

Semester : 4th Date : 18 __/ __11 __/2015Time : 2:30 To 5:30

Marks :70

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
 - (2) Instructions written on main answer book are strictly to be obeyed.
 - (3) Draw neat diagrams and figures (if necessary) at right places.
 - (4) Assume suitable data if needed.
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- Q-1 Attempt the following questions: (14)**
- a) A Stepper motor may be consider as a..... converter (1)**
- a) DC to Dc
 - b) AC to AC
 - c) DC to AC
 - d) Digital to Analogue
- b) Start i ng wi ngi ng of single phase induction motor is placed in (1)**
- a) Stator
 - b) Rotor
 - c) Field
- c) In a synchronous motor, damper winding is provided to (1)**
- a) Stabilize rotor motion
 - b) Suppress rotor oscillations
 - c) Develop necessary starting torque
 - d) Both B and C
- d) Which motor is widely used? (1)**
- a) A squirrel cage induction motor
 - b) A slip-ring induction motor
 - c) A wound rotor synchronous motor
 - d) A salient pole synchronous motor
- e) A permanent spilt single phase capacitor motor does not have (1)**
- a) Centrifugal switch
 - b) Starting winding
 - c) Squirrel cage rotor
 - d) High power factor



- f)** What type of single phase induction motor would you use for the Ceiling fan ? (1)
a) Shaded pole
b) Capacitor start capacitor run
c) Capacitor start induction run
d) None
- g)** Zero power factor method of alternator is use to find its (1)
a) Efficiency
b) Voltage regulation
c) Armature resistance
d) Synchronous impedance
- h)** For starting a Schrage motor, 3 phase supply is connected to (1)
a) Stator
b) Rotor via slip rings
c) Regulating winding
d) Secondary winding
- i)** In capacitor start motor, capacitor controls the (1)
a) starting value
b) speed of the motor
c) efficiency
d) none of the above
- j)** A universal motor is one which (1)
a) is available universally
b) can be marked internationally
c) can be operated either AC or DC
d) runs at dangerously high speed on no load
- k)** Speed of universal motor is (1)
a) Depends on frequency of supply
b) Proposal to frequency of supply
c) Independent of frequency of supply
d) Non o above
- l)** Which of the following motors is used most frequently ? (1)
a) DC shunt motor
b) AC induction motor
c) 3-phase commutator motor
d) 3-phase induction motor
- m)** The capacitor start motor uses (1)
a) paper capacitor
b) electrolytic capacitor
c) air capacitor
d) none of the above



- n) The power factor of an alternator depends on (1)
- Load
 - Speed of rotor
 - Core losses
 - Armature losses.
- Q-2 Attempt all questions (14)**
- Explain Double Revolving Field For Single Phase Induction Motor. (7)
 - Explain Construction And Working Of Shaded Pole Motor (7)
- Q-3 Attempt all questions (14)**
- Give Application Of single phase and three phase Induction Motor (7)
 - Give Methods Of Starting Induction Motor. Explain Any One In Detail. (7)
- Q-4 Attempt all questions (14)**
- Explain Constructional And Working Principle Of Alternator (7)
 - Prove EMF Equation For Alternator. (7)
- Q-5 Attempt all questions (14)**
- Give Methods Of Determining Voltage Regulation Of Alternator And Explain Any One In Detail. (7)
 - Draw and explain torque slip characteristic of induction motor.. (7)
- Q-6 Attempt all questions (14)**
- Explain Methods Of Starting Of Synchronous Motor. (7)
 - Explain Construction Of V Curve. (7)
- Q-7 Attempt all questions (14)**
- Explain Basic Principles, Operation Characteristics And Applications Of Stepper Motor (7)
 - Explain Basic Principles, Operation Characteristics And Applications Of Linear Induction Motor (7)
- Q-8 Attempt all questions (14)**



- (A) A 400 V, 30 HP, 50 Hz, 4 Pole, delta connected induction motor gave the following test results. (7)
- No load test: 400 V, 12A, 1.2 KWatt
Short Circuit Test: 100 V, 40 A, 3 KWatt
Draw the circle diagram and find
Stator current and power factor on full load
Full load torque
Maximum torque
Efficiency and slip on full load
- (B) Comparison Different Type Of Alternator. (7)

