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121035/031035

3rd Sem. / ECE. / EI / IC / ME / PE / E&E Engg.

Subject : Electrical Machines

Time : 3 Hrs. M.M. : 100

SECTION-A

Note: Very Short Answer type questions. Attempt any 15 parts. (15x2=30)

Q.1
a) Define 3 phase system
b) Define power factor
c) Define secondary winding
d) What is the use of magnetic core in transformer?
e) Compare self induced and mutual induced emf.
f) Define transformation ratio.
g) Insulation in transformer is used to _____.
h) Name any two types of losses of transformer.

i) Give formula for efficiency of a transformer.

j) Speed of DC motor can be controlled by ____method.

k) DC series motor should not be started without load because _____.

l) What is use of end rings in induction motor?

m) What are two essentials parts of induction motor?

n) What is function of damper windings in synchronous motor?

o) Define Universal motor.

p) A universal motor can be operated on ____ (AC/DC/ both AC & DC).

q) Define stepper motor.

r) Write application of servo motor.

SECTION-B

Note: Short answer type questions. Attempt any ten parts 10x4=40

Q.2 i) What are advantages of 3 phase system?

ii) Explain different methods of measurement of power in 3 phase system.

iii) What do you understand by Star connections?

iv) Write a short note on ideal transformer.

v) What do you mean voltage regulation?

vi) What are different parts of transformer ?

vii) Why is the core of a transformer laminated?

viii) How is torque producted in a DC motor?

ix) Explain the function of commutator in DC motor.

x) Name different types of DC motor.

xi) Write a short note on Rotor in induction motor.

xii) What is effect of motor resistance on torque?

xiii) What is effect of excitation on synchronous motor?

xiv) Write a short note on "Single phase motor?

xv) Write a short note on "Servo motor".

SECTION-C

Note: Long answer type questions. Attempt any three questions. 3x10=30

Q.3 What are instrument transformers? What are different types of instrument transformers?

Q.4 Explain in detail, the construction of DC motor.

Q.5 What are different methods to control the speed of Induction motor?

Q.6 Explain principle and construction of Synchronous motor.

Q.7 Describe principle and construction of Universal motor.