

No. of Printed Pages : 4

Roll No.

121035/031035

3rd Sem. / E.C.E. / E.I. / IC / PE

Subject : Electrical Machine

Time : 3 Hrs.

M.M. : 100

SECTION-A

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

- Q.1 a) In Delta connection line current (I_L) = _____ x I_{ph} .
- b) Core of Transformer is laminated to reduce _____ losses.
- c) If W_1 , W_2 are reading of wattmeters in two wattmeter method then total power = _____.
- d) What is the condition for maximum efficiency in a transformer.
- e) Name any two types of losses of transformer.
- f) No. of parallel paths in a 4 pole wave wound armature of a D.C. motor are _____.

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- g) Back emf induced in a DC motor is more than applied voltage. True/False.
- h) Speed of a DC can be increased by _____ flux.
- i) If an I.M run at 1440 rpm, the synchronous speed should be more than 1440 rpm. (True/False)
- j) A universal motor operates on A.C only. True/False.
- k) A ceiling fan uses split phase motor. True/False.
- l) What will happen to the speed of D.C shunt motor if load is increased?
- m) Synchronous motor is constant speed motor. True/False.
- n) Direction of 3 phase induction motor can be reversed by _____.
- o) At a time of start the value of a slip = _____.
- p) Motor which runs in step, is called _____.
- q) What are two essentials part of induction motor.
- r) Write applications of servo motor.

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SECTION-B

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

- Q.2
- i) Draw Star and delta connection in 3 phase system. indicating V_L , V_{ph} , I_L , I_{ph} .
 - ii) Explain Auto transformer.
 - iii) What are advantage of a 3 phase system. Over single phase system.
 - iv) Write a short note on ideal transformer?
 - v) What are different parts of a transformer?
 - vi) Explain the function of commutator in DC motor.
 - vii) Explain any two methods to control speed of D.C. shunt motor.
 - viii) How is torque producted in DC motor?
 - ix) What is difference between squirrel cage induction motor and slip ring induction motor.
 - x) What is effect of excitation on synchronous motor?
 - xi) Hybrid stepper motor have many phase. Why?

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- xii) Explain the working principle of stepper motor.
- xiii) Name different types of DC motor.
- xiv) List various starter used for squirrel cage induction motor.
- xv) Write a short on "servo motor".

SECTION-C

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

- Q.3 Explain auto transformer in detail.
- Q.4 Explain construction, working, principle of single phase induction motor.
- Q.5 Explain principle and construction of Synchronous motor.
- Q.6 Explain variable Reluctance stepper motor with suitable diagram.
- Q.7 Describe construction and working of three point starter with suitable diagram.

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