

(Following Paper ID and Roll No. to be filled in your Answer Book)

ID : 2494

Roll No.

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B.Tech.

(SEM. VI) EVEN THEORY EXAMINATION 2012-13

SPECIAL ELECTRICAL MACHINES

Time : 3 Hours

Total Marks : 100

Note :- Attempt all questions.

1. Attempt any two of the following : **(10×2=20)**
 - (a) Describe the construction of double cage three phase induction motor. How does it differ from the slip ring and deep bar induction motors ?
 - (b) How and why is emf injected into the rotor circuit of slip ring induction motors ?
 - (c) Write a brief note on the control of static slip power recovery.
2. Attempt any two of the following : **(10×2=20)**
 - (a) Describe the theory that reveals that a single phase induction motor is inherently non-self starting, but once started, run like a three phase induction motor.
 - (b) How does a capacitor start single phase induction motor work ? How does capacitor start capacitor run single phase induction motor differ from the above ?
 - (c) Describe the working principle and applications of a two phase AC servomotor.

3. Attempt any **two** of the following : **(10×2=20)**
- (a) What do you understand by hybrid stepper motors ?
 - (b) How does a hybrid stepper motor differ from the other types of stepper motor ?
 - (c) How is the torque produced by a switched reluctance motor ? Justify the name of this motor.
4. Attempt any **two** of the following : **(10×2=20)**
- (a) What is a permanent magnet dc motor ? Where do we find applications ?
 - (b) Discuss about operation and application of PMSM motors.
 - (c) What do you know about single phase synchronous motor ?
5. Attempt any **two** of the following : **(10×2=20)**
- (a) Discuss about the principle of operation of a universal motor.
 - (b) What do you know about Linear Induction motors ?
 - (c) Describe development of linear force in LIM.