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SUBJECT CODE NO: E-189
FACULTY OF ENGINEERING AND TECHNOLOGY
T.E.(EEP/EE/EEE) Examination Nov/Dec 2017
Special Purpose Electrical Machines
(REVISED)

[Time: Three Hours]

[Max.Marks:80]

- N.B
- Please check whether you have got the right question paper.
1. Q.1 & Q.6 are compulsory.
 2. Solve any 2 questions from remaining.

Section A

- Q.1 Solve any five from following. 10
- a) What are the advantages of BLDC motor?
 - b) Write any two applications of LIM.
 - c) Why stepper motor called so?
 - d) What is meant by voltage regulation?
 - e) What is electronic commutator?
 - f) What is meant by “Axial air gap”?
 - g) Why induction generator is often called as an asynchronous generator?
 - h) What is maximum available power rating of any FHP motor?
- Q.2 07
- a) Explain construction, working & application of hybrid stepper motor.
 - b) Explain different methods of voltage control in induction generator. 08
- Q.3 08
- a) Explain construction, working & application of PSPM.
 - b) Describe construction & working of LIM. 07
- Q.4 08
- a) Explain construction operating principles & working of BLDC motor.
 - b) Explain variable reluctance stepper motor in detail. 07
- Q.5 07
- a) Explain self-excitation requirements in case of induction generator.
 - b) Give the comparative study of three types of stepper motor. 08

Section B

- Q.6 Solve any five 10
- a) Why electric heating is preferred over other form of heating?
 - b) What is Arc Blow?
 - c) Write any four applications of resistance oven.
 - d) What are the various reasons of heating element failure?
 - e) What is welding?
 - f) State faradays first law of electrolysis.
 - g) Define convection of heat.
 - h) List out types of welding equipment's.

- Q.7 a) Explain different methods of induction heating. Also mention its applications. 08
b) What is dielectric heating? Explain factors on which dielectric loss depends. 07
- Q.8 a) Explain factors affecting electro-deposition. 08
b) Explain in detail application of electrolytic process used for metal extraction. 07
- Q.9 a) How does a buck boost transformer differ from isolating transformer? Can buck boost transformer be used to power low voltage circuit? 08
b) Explain rectifier transformer in detail, with applications. 07
- Q.10 a) Explain MIG welding process in detail. 08
b) What is isolation transformer? Explain different applications of isolation transformer in detail. 07