

SUBJECT CODE NO:- P-7
FACULTY OF ENGINEERING AND TECHNOLOGY
T.E.(EEP/EE/EEE) Examination May/June 2017
Special Purpose Electrical Machines
(Revised)

[Time: Three Hours]

[Max.Marks:80]

Please check whether you have got the right question paper.

- N.B
- i) Q.No.1 & Q.No.6 are compulsory.
 - ii) Attempt any two questions from each section from remaining. (Total Six questions.)

Section A

- Q.1 Attempt any five from following. 10
- a) What is an induction Regulator?
 - b) How the CTs are rated?
 - c) How the transformers are rated?
 - d) Draw Torque –slip characteristics of Induction Machine.
 - e) Write applications of Induction Generator?
 - f) Write composition of shaft position sensing unit.
 - g) Why induction generator is called as asynchronous generator.
 - h) What is maximum Rating of FHP motor?
- Q.2 a) Describe a scheme of Turbine & induction generator which enable maximum amount of energy to be extracted from wind all times. Draw sketches. 08
- b) With neat diagram, explain the principle of operation of induction generator. 07
- Q.3 a) Explain the working of Doubly fed induction machine with neat diagram. 08
- b) With neat sketches, explain the construction & working of BLDCM. 07
- Q.4 a) With neat sketch, explain constructional features of an axial air gap synchronous reluctance motor. 08
- b) Draw & explain the basic configuration & working of stepper motor. 07
- Q.5 a) List out various methods of Voltage control for an induction generator & explain any one with neat diagram. 08
- b) Write various applications of an Isolating transformer, and explain any one specific application with its equivalent circuit. 07

Section B

- Q.6 Attempt any Five from following. 10
- i. Write applications of resistance oven.
 - ii. Write classification of welding processes.
 - iii. State the second Law of Electrolysis.
 - iv. Define BUCK & BOOST.
 - v. What is most common use of Rectifier Transformer?
 - vi. Define Heat convection & Heat conduction.
 - vii. Write in full form, any two modern welding Techniques.
 - viii. Define SPOT WELDING process.
- Q.7 a) Write in brief about MIG welding equipment, with sketch. 08
- b) Explain with sketches, how the building is Heated? 07

- Q.8 a) Explain in Details TIG welding process, with sketches. 08
b) Explain with diagram, working of core type Induction furnace. 07
- Q.9 a) With neat diagram, compare direct Arc & indirect Arc furnaces. 08
b) Write short note, with neat diagram on Resistance oven & its application. 07
- Q.10 a) Describe with suitable diagram the process of Electrode position. 08
b) With neat sketches, explain the process of extraction & refining of metals. 07