

Registration Number:
PSNA College of Engineering and Technology
Department of Electrical and Electronics Engineering
Serial Test-II

Power Electronics for Renewable Energy Systems

Year/Sem : II (M.E)/III

Max.Marks:50

Staff In-charge: **M.Kaliamoorthy**

Time: 90 Mins

Part A (9 * 2 = 18)

Answer any **NINE** questions

1. Define Transformation matrix.
2. Prove that 3 Phase to 2 Phase transformation is power invariant.
3. List the different types of generators used in wind energy conversion techniques.
4. Draw the basic block diagram of Wind energy conversion system.
5. Mention the advantages of Induction generators over synchronous generators.
6. Under what circumstances induction machine will act as induction generator.
7. Differentiate stand alone WECS and Grid connected WECS.
8. Draw the equivalent circuit model of Self Excited Induction generator
9. Differentiate Squirrel cage induction generator and double fed induction generator.
10. Mention the advantages of permanent magnet synchronous generators (PMSG).

Part B (9 * 2 = 18)

Answer **ALL** questions

11. With neat block diagram explain the basic principle of operation of self excited induction generator (SEIG). Also discuss in detail about the steady state analysis of SEIG. (16)
(OR)
12. Explain the various operating modes of Double Fed Induction Generator (DFIG).).Also discuss in detail about the steady state analysis of DFIG. (16)
13. Derive the Dynamic expressions of SEIG from their d, q equivalent circuit. (16)
(OR)
14. Derive the Dynamic expressions of PMSM from their d, q equivalent circuit. (16)

Signature of HOD

Staff in charge