Registration Number:

PSNA College of Engineering and Technology

Department of Electrical and Electronics Engineering

Serial Test-I 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. What are the advantages & disadvantages of Non-Conventional Sources of Energy?
2. What are the conventional and non conventional energy sources?
3. List down the major sources of pollutants in Air?
4. What is greenhouse gas effect?
5. What are the key greenhouse gases driving global warming
6. What is meant by photo voltaic effect?
7. What is the material used in solar cell?
8. Define the cut in speed and cut out speed.
9. What are the main components of wind mill?
10. Explain the process "photosynthesis"

Part B (2 *16 = 32) Answer **ALL** questions

11. Explain the principle of Solar Photovoltaic Power Generation? Draw and Explain PV Cell characteristics and equivalent circuit. Also explain how the solar array is integrated to power grid. (16)

(OR)

12. What are the different classifications of Wind Energy Conversion Systems? State its advantages and disadvantages. Explain in detail about horizontal axis wind mill describing all the components of it with neat diagram. (16)
13. Explain in detail about arbitrary reference frame theory. Derive the expressions for converting stationary circuit variables in to arbitrary reference frame. (16)

(OR)

14. What is the basic principle of ocean thermal energy conversion (OTEC)? What are the main types of OTEC power plants? Describe their working in detail (16)

Staff in charge **HOD/EEE**