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**[4857]-1031****S.E. (Electrical) (First Semester) EXAMINATION, 2015****POWER GENERATION TECHNOLOGIES****(2012 PATTERN)****Time : Two Hours****Maximum Marks : 50**

**N.B. :—** (i) Answer Q. No. 1 or Q. No. 2, Q. No. 3 or Q. No. 4,  
Q. No. 5 or Q. No. 6, Q. No. 7 or Q. No. 8

(ii) Neat diagrams must be drawn wherever necessary.

(iii) Figures to the right indicate full marks.

1. (a) Explain Rankine cycle and actual Rankine cycle. Differentiate between them. [6]
- (b) With the help of diagram describe the layout of nuclear power plant. [6]

*Or*

2. (a) Write the types of boilers in thermal power plant. Explain any *one* of them with the help of diagram. [7]
- (b) Describe open loop and closed loop gas power plants. [5]
3. (a) In hydro power plants classify hydraulic turbines and give examples of each. [6]
- (b) Derive the relation of power in the wind in case of wind energy system. [4]

P.T.O.

- (c) What is the impact of tower height on wind energy system ? [3]

*Or*

4. (a) For hydro power plant write short notes on : [8]  
 (i) Spill ways  
 (ii) Control of hydroturbines.  
 (b) Explain how change in wind pattern affects the power generation in wind power plant. [5]

5. (a) Describe solar thermal power plant with diagram. [7]  
 (b) Explain with sketch Municipal Solid Waste (MSW) to energy conversion plant indicating the function of each component. [6]

*Or*

6. (a) Explain the impacts of following on PV system I-V curves : [6]  
 (i) Temperature  
 (ii) Insulation  
 (iii) Shading  
 (b) Write short note on hybrid stand alone renewable system and its requirement. [7]
7. (a) What are the recent developments on PV technologies ? [6]  
 (b) Explain how biomass energy is used to produce electricity. [6]

*Or*

8. (a) Describe the types of major PV systems. [6]  
 (b) What is geothermal energy ? Explain with sketch how it can be harnessed to generate electricity. [6]