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**[5152]-142**

**S.E. (Electrical) (First Semester) EXAMINATION, 2017**

**POWER GENERATION TECHNOLOGY**

**(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.  
(iv) Assume suitable data, if necessary.

1. (a) What is draught system in thermal power plant ? Differentiate between artificial and forced draught. [7]  
(b) Explain the site selection of nuclear power plant. [5]

*Or*

2. (a) With the help of neat diagram explain the main components and working of diesel power plant. [7]  
(b) Explain one method of control of steam turbines in thermal power plants. [5]
3. (a) Explain the terms storage and pondage. [6]  
(b) How the wind pattern affect power generation in wind energy systems ? [7]

P.T.O.

*Or*

4. (a) With the help of sketch explain Pelton wheel turbine. [7]  
(b) Write short note on wind turbine power converters. [6]
5. (a) Develop simple equivalent circuit for a PV cell. [6]  
(b) Explain the impacts of temperature and insolation I-V curves of PV cell. [7]

*Or*

6. (a) Define and explain the terms : [6]  
(i) Solar constant  
(ii) Concentration ratio.  
(b) Explain solar energy collectors used for solar thermal applications. [7]
7. (a) Explain with the help of sketch the process of biomass energy conversion to electricity. [6]  
(b) Describe the harnessing the ocean energy to produce electricity. [6]

*Or*

8. (a) Explain how renewable energy systems can be connected to grid. [7]  
(b) How fuel cell energy is helpful in energy storage system ? [5]