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[5459]-151

**S.E. (Electrical) (I Sem.) EXAMINATION, 2018**

**POWER GENERATION TECHNOLOGIES**

**(2015 PATTERN)**

**Time : Two Hours**

**Maximum Marks : 50**

**N.B. :-** (i) Neat diagrams must be drawn wherever necessary.

(ii) Figures to the right indicate full marks.

(iii) Use of logarithmic tables slide rule, Mollier charts, electronic pocket calculator and steam tables in allowed.

(iv) Assume suitable data, if necessary.

1. (a) Explain main components and working of Diesel Power plant. [6]  
(b) With the help of diagram explain the main parts and working of thermal power plant. [6]

*Or*

2. (a) Explain the construction and working of Nuclear Power Plant. [6]  
(b) Compare Rankine cycle and Carnot cycle. [6]

3. (a) Explain in detail the impact of Tower Height in Wind turbine Plant. [7]

(b) In Hydroelectric Power plants writes short notes on : [6]

(i) Spillways

(ii) Penstock.

*Or*

P.T.O.

4. (a) Explain the difference between the working of Francis turbine and Kaplan turbine used in hydropower plants. [6]  
(b) Describe the types of wind turbine electrical generators. [7]
5. (a) Explain photovoltaic cells. How are they used for energy storage requirements ? [7]  
(b) Explain stand-alone, hybrid stand-alone and grid connected renewable energy systems. [6]

*Or*

6. (a) Explain the process of municipal solid waste to energy conversion. [6]  
(b) With the help of diagram explain the main concept of solar thermal power plant. [7]
7. (a) Explain how biomass energy is used to produce electricity ? [6]  
(b) Explain the methods of measurement of solar radiation. [6]

*Or*

8. (a) Define and explain the terms in solar energy system : [6]  
(i) Solar constant  
(ii) Concentration ratio.  
(b) What is geothermal energy ? Explain with sketch how it can be harnessed to generate electricity ? [6]