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[5352]-542

S.E. (Electrical) (First Semester) 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 is allowed.

(iv) Assume suitable data, if necessary.

1. (a) Explain Rankine cycle with PV and TS Diagram. [6]

(b) Explain coal handling system in thermal power plant with neat flow chart. [6]

Or

2. (a) Explain the working of Air-preheater and economiser in thermal power plant and show its location in layout. [6]

(b) With the help of diagram explain the diesel power plant. [6]

3. (a) Explain hydrograph and flow duration curve with example. [6]

(b) Derive the relation for the power in wind and describe the Environmental Impacts of Wind Turbines. [7]

P.T.O.

Or

4. (a) Explain the following terms with sketches : [6]
(i) Water hammer effect
(ii) Surge tank.
(b) Explain working of vertical type wind turbine with diagram. [7]

5. (a) Explain the process of municipal solid waste to energy conversion with diagram. [7]
(b) Explain the Shading impacts on I-V curves of PV cells. [6]

Or

6. (a) Explain the process Biomass energy conversion. [6]
(b) With the help of diagram explain the concept of solar thermal power plant. [7]

7. (a) Define the terms in solar energy system : [6]
(i) Solar constant
(ii) Cloudy index
(iii) Concentration ratio.
(b) Explain grid connected renewable systems and their requirements. [6]

Or

8. (a) Explain the working of PV cell and Simplest Equivalent Circuit for a Photovoltaic Cell. [6]
(b) Describe the fuel cells. How are they used for energy storage requirements ? [6]