Total No. of Questions—8] [Total No. of Printed Pages—2

Seat No.	

[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 converison. [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]