USN | | | | | | | | | | | **15ME71**

Seventh Semester B.E. Degree Examination, Dec.2018/Jan.2019
Energy Engineering

Time: 3 hrs.   Max. Marks: 80

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1 a. Explain with neat sketch, Spreader Strokers.   **(08 Marks)**
   b. What is Pulvarised coal? What are the advantages and limitations of Pulvarised coal?
                                                                             (08 Marks)

OR

2 a. Explain with neat sketch, Cyclone Burner.   **(08 Marks)**
   b. Explain Forced drought system.   **(08 Marks)**

Module-2

3 a. Explain with neat sketch air intake and exhaust system.   **(08 Marks)**
   b. List the advantages , limitation and application of Diesel Power Plant. **(08 Marks)**

OR

4 a. How the Hydel power plants are classified and explain with neat sketch Pumped storage
      plant?   **(07 Marks)**
   b. Define i) Hydrograph   ii) Flow duration curve   iii) Surge tank.   **(09 Marks)**

Module-3

5 a. What is Beam Radiation? Explain working principle of Pyrheliometer for measuring beam
      radiation.   **(08 Marks)**
   b. The incident beam of sunlight has a power density of $1kW/m^2$ in the direction of beam. The
      angle of inclination is 60^0. Calculate the power collected by the surface having a total area of
      $120m^2$.   **(08 Marks)**

OR

6 a. Explain with neat sketch, working principle of a solar cell.   **(08 Marks)**
   b. Explain three Basic methods of Thermal Energy Storage.   **(08 Marks)**

Module-4

7 a. Explain with neat sketch, Verticle axis type wind mill.   **(08 Marks)**
   b. Wind at 1 standard atmospheric pressure and 15^0C temperature has a velocity of 15m/s with
      turbine operating speed of 40 rpm at maximum efficiency. Assume turbine diameter 120m.
      Calculate i) Total power density in the wind stream   ii) The maximum obtainable
      power density   iii) A reasonably obtainable power density @ $\eta = 35\%$ iv) Total
      power.   **(08 Marks)**

OR

8 a. How Tidal power plants are classified and what are the limitations of Tidal power plant?
                                                                             (09 Marks)
   b. Explain Fundamental characteristics of Tidal power plant selection.   **(07 Marks)**

Module-5

9 a. Write short notes on :
    i) Photo synthesis   ii) Energy plantation.   **(08 Marks)**
  b. With neat sketch, explain down draft gasifier.   **(08 Marks)**

OR

10 a. What is Fuel cell? How fuel cells are classified?   **(08 Marks)**
   b. What is Green energy? What are the benefits of green energy?   **(08 Marks)**

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