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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belgaum)

Eighth Semester, B.E. - Mechanical Engineering

Semester End Examination; June - 2016

Power Plant Engineering

Time: 3 hrs *Max. Marks: 100*

Note**: Answer any **FIVE** full questions, selecting at least **TWO** full questions from each **part.

PART - A

1. a Explain with neat sketch power generation by wind mills. 10

   b. With a neat sketch explain Ocean Thermal Energy Conversion (OTEC). 10

2 a. Write a note on : (i) Catchment area (ii) storage and pondage (iv) Hydrographs. 12

   b. Explain briefly medium head power plants with neat sketch. 8

3 a. With a neat sketch explain central or Bin system of feed the pulverised fuel. 10

   b. Explain with a neat sketch spreader stoker. 10

4 a. Explain with a neat sketch Benson boiler. 10

   b. Differentiate between ; (i) Natural and forced draught system
   (ii) Induced and balanced draught system. 6

   c. Calculate the height of chimney required to produce a draught equivalent to 1.7 cm of water if the gas temp is 270°C and ambient temp is 22°C and min. amount of air per kg of fuel in 17 kg. 4

PART - B

5 a. With a neat sketch explain any one type of ash handling system. 10

   b. Write a note on cooling towers. 5

   c. Write the advantages and disadvantages of super-heaters and reheaters. 5

6 a. Sketch a schematic arrangement of a diesel power plant and label the parts. 8

   b. List the advantages of gas turbine power plant. 6

   c. With a neat sketch explain open cycle gas turbine plant. 6

7 a. List the essential parts of nuclear reactor and explain any two parts. 10

   b. Differentiate between fission and fusion reactions 6

   c. Write a note on nuclear fuels. 4

8 a. Explain with neat sketch pressurized water Reactor (PWR). List the advantages and disadvantages. 14

   b. Write a note on radioactive waste disposal. 6

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