U.S.N					



7 a.

b.

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

(An Autonomous Institution affiliated to VTU, Belagavi)

Eighth Semester, B.E. - Mechanical Engineering Semester End Examination; June - 2017 Power Plant Engineering

Power Plant Engineering Time: 3 hrs Max. Marks: 100 Note: Answer FIVE full questions, selecting ONE full question from each unit. UNIT - I Sketch and explain harnessing of tidal energy. 8 1 a. The peak load on a power station is 40 MW. The loads having maximum demands of b. 18 MW, 12 MW, 8 MW and 9 MW are connected to the power station the capacity of the power station is 50 MW, annual load factor is 62%. Find, 12 (i) Average load on the power station (ii) Energy supplied per year (iii) Demand factor (iv) Diversity factor. 2 a. With a neat sketch, explain geothermal energy conversion process and list the advantages 12 and disadvantages. With neat sketch, Explain thermo electric power generation. 8 b. **UNIT - II** Sketch and explain general arrangement of hydroelectric power plant. 3 a. 10 The average monthly discharge for 12 months at a site of river is given below: b. Month Jan Feb Mar Apr May June July Aug Sept. Oct. Nov. Dec. 10 Discharge m³/s 100 250 350 700 800 900 600 600 1000 1200 400 200 ii) Flow duration curve. Draw, i) Hydrograph 4 a. Sketch and explain the working of spreader stoker and list the advantages and disadvantages. 10 Explain the BIN system handling pulverized coal with a neat sketch and state the limitations. b. 10 **UNIT - III** 5 a. 10 Sketch and explain the working of Velox boiler. Classify the ash handling system? Explain with sketch the working principle of pneumatic b. 10 ash handling system. 6 a. With neat sketch explain hyperbolic cooling tower and list merits and demerits. 10 Sketch and explain forced draught and induced draught system. b. 10 **UNIT-IV**

Explain with neat sketch cooling system in diesel power plant.

Sketch and explain direct open cycle and indirect open cycle gas turbines.

10

10

P131	ME843 Page No 2	Page No 2			
8 a.	Draw a general layout of diesel power plant.	12			
b.	What are the advantages, disadvantages and applications of gas turbine power plants?	8			
	UNIT - V				
9 a.	Explain with examples nuclear fusion and nuclear fission reactions.	8			
b.	with a neat sketch, explain pressurized water reactor (PWR) and list the advantages an				
	disadvantages.	12			
10 a.	With sketch, Explain the components of a nuclear reactor.	12			
b.	Explain briefly radiation hazardous and its control.	8			

* * * *