B.E. Instrumentation Engineering Seven Semester

Elective-I : IN7042 - Unit Operation And Power Plant Instrumentation

P. Pages : 2 **GUG/W/18/1830**

Time : Three Hours * 1 4 2 9 * Max. Marks : 80

Notes : 1. All questions carry marks as indicated.
2. Due credit will be given to neatness and adequate dimensions.
3. Assume suitable data wherever necessary.
4. Illustrate your answers wherever necessary with the help of neat sketches.

1. a) Outline the term "Selection of pipe sizes" for fluid transportation. **8**

b) Enlist the various grinding machines (Mills) and explain any two in detail. **8**

OR

2. a) Categorize the various heat exchangers and review each with neat diagram. **8**

b) Discuss Gas absorption and distillation as mass transfer processor. **8**

3. a) Describe the importance of heat transfer in chemical engineering processes. **8**

b) Discuss crude oil distillation unit with a schematic flow diagram. **8**

OR

4. a) Illustrate the importance of heat transfer in chemical processes. **8**

b) Write short note on **any two.** **8**
a) Flash Distillation.
b) Continuous distillation with reflux.
c) Multi component distillation system.

5. a) Describe the solar pond electric power plant with cooling tower. **8**

b) Show the layout and explain the process for biogas plant. **8**

OR

6. a) Describe with neat sketch the working of wind Energy conversion system (WECS) with main component. **8**

b) Discuss "Green house" and elaborate different designs of green houses. **8**

7. a) Sketch a general layout of a thermal power plant and explain the working of different cycles in layout. **8**

b) Classify and describe the different ash handling system with the relative merits and demerits. **8**

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OR

8.	a)	Discuss the factors are considered for selecting a site for a big Thermal power plant.	**8**
	b)	Discuss "Draught" with its classification in detail.	**8**
9.	a)	Predict the causes of corrosion and scale formation in condenser tubes and discuss the different methods use for their prevention.	**8**
	b)	State the function of a cooling tower in a modern steam power plant and describe the working of mechanical type cooling tower with a neat sketch.	**8**

OR

10.	a)	Recognize the necessity of external treatment of feed water and describe the various treatment techniques.	**8**
	b)	Define Dalton's law of partial pressure and explain how it applier to a condenser of steam power plant.	**8**

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