

B.E. / B.Tech. Instrumentation Engineering (Model Curriculum) Semester-V
IN501M1 - Professional Elective-I : Unit Operations Power Plant Instrumentation

P. Pages : 2

Time : Three Hours



GUG/W/24/14019

Max. Marks : 80

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- Notes :
1. All questions carry marks as indicated.
 2. Assume suitable data wherever necessary.
 3. Diagrams and Chemical equation should be given wherever necessary.

1. a) Name the distinct modes of heat transfer and describe the basic laws associated with it. 8
- b) What is the significance of unit operations in power plant? 8

OR

2. a) Categorize the various heat exchangers and review each with neat diagram. 8
- b) Describe the importance of heat transfer in chemical engineering processes. 8
3. a) Enlist the types of evaporators and explain any two in detail. 8
- b) Explain Gas absorption and distillation as mass transfer processes. 8

OR

4. a) Discuss Drying with principle of operation & Classification. Describe any two in detail. 8
- b) Explain the process of Batch and Continuous distillation. 8
5. a) Describe the Solar Pond electric power plant with cooling tower. 8
- b) Describe with a neat sketch the working of a Wind Energy Conversion Systems (WECS) with main components. 8

OR

6. a) Compare hydro power plants with thermal power plants. 8
- b) Describe the working of nuclear power plant with neat diagram. 8
7. a) Sketch and explain general layout of a thermal power plant. 8
- b) Give in own words "Present status of power generation in India". 8

OR

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| 8. | a) | Classify and describe the different ash handling system with the relative merits and demerits. | 8 |
| | b) | Give the classification of boiler. Explain any one in detail. | 8 |
| 9. | a) | Classify turbine and explain the Internal construction of anyone. | 8 |
| | b) | Differentiate between impulse and reaction turbine. | 8 |

OR

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| 10. | a) | Predict the causes of corrosion and scale formation in condenser tubes and discuss the different methods used for their prevention. | 8 |
| | b) | Define Dalton's law of partial pressure and explain how it applies to a condenser of steam power plant. | 8 |
