

**DIPLOMA IN MECHANICAL ENGINEERING
(DME)**

Term-End Examination

December, 2015

BME-058 : POWER PLANT ENGINEERING

Time : 2 hours

Maximum Marks : 70

Note : Answer any **seven** questions. All questions carry equal marks.

1. Write short notes on any **two** of the following : $2 \times 5 = 10$
 - (a) Hydro-electric Power Plant
 - (b) Wind Power Plant
 - (c) Geo-Thermal Power Plant

2. Describe the various components of a gas turbine power plant. Draw the neat sketch of the plant and pv diagram. 10

3. (a) How are boilers classified ? 2
(b) Discuss the functions of a boiler and describe the functions of each component of a boiler. 8

4. Describe the different operations of Rankine-cycle. Also derive the expression for its efficiency. 10
5. (a) Describe briefly the various methods of 'Steam turbine governing'. 6
- (b) What is a steam condenser ? State its functions. 4
6. Write short notes on the following : $2 \times 5 = 10$
- (a) Cochran Boiler
- (b) Schmidt – Hartmann Boiler
7. (a) What are the types of condensers in a power plant ? Describe any one with a neat sketch ? 7
- (b) Differentiate between induced and forced draught. 3
8. (a) Explain the working of reactor in a nuclear power station. 4
- (b) How are nuclear reactors classified ? Explain with a neat sketch the working of a pressurised water reactor. 6

9. (a) State and explain the factors which are required to be considered in the choice of diesel engine for a diesel power plant. 5
- (b) Discuss the relative advantages and disadvantages of closed cycle and open cycle gas turbine plants. 5
10. (a) Draw a layout of a medium head hydro-electric plant using Francis turbines and describe the components in brief. 7
- (b) What is the significance of load curves ? 3
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