

**DIPLOMA IN MECHANICAL ENGINEERING  
(DME)**

**Term-End Examination**

**December, 2017**

00912

**BME-058 : POWER PLANT ENGINEERING**

*Time : 2 hours*

*Maximum Marks : 70*

**Note : Answer any seven questions.**

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1. (a) What is meant by commercial and non-commercial energy sources? 2  
(b) What factors are mainly considered in selecting a prime-mover for
    - (i) a run-off river plant?
    - (ii) a storage plant?
    - (iii) a pump-storage plant? 8
  2. (a) What are the main circuits in a thermal power plant? 2  
(b) Describe with a neat sketch, the various methods in pulverised coal-firing system. 8
  3. (a) What is binding energy? 2  
(b) What are the health hazards in a nuclear power plant? Discuss. 8

4. (a) What are the essential functions of a fuel injection system in a diesel engine power plant? 2
- (b) A C.I. engine with cylinder dimensions of 200 mm × 250 mm works on a two-stroke cycle and consumes 14 kg/hr of fuel while running at 300 rpm. The mechanical efficiencies of the engine are 76%. The calorific value of the fuel used is given as 41800 kJ/kg, the mean effective pressure developed in the cylinder is 8.27 bar. Find the brake horse power. 8
5. (a) What are the advantages of Reheat Rankine cycle? 2
- (b) Draw the general layout of a gas turbine and explain the components. 8
6. (a) List the advantages and disadvantages of a hydro power plant. 3
- (b) Describe the various components of a hydro power plant. 7
7. (a) Define plant capacity factor. 2
- (b) Explain the factors affecting economy in power generation and distribution. 8

8. (a) What is meant by superheat? 2
- (b) With neat sketches, discuss the various types of feed water heaters. 8
9. (a) Differentiate between nuclear fission and nuclear fusion. 5
- (b) Classify steam turbines. Explain one type of steam turbine with a neat sketch. 5
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