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BME-058

DIPLOMA IN MECHANICAL ENGINEERING (DME)

Term-End Examination

00171

June, 2015

BME-058 : POWER PLANT ENGINEERING

Time : 2 hours *Maximum Marks : 70*

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

1. Describe the following gaseous fuels : *10*

(a) Coal gas

(b) Coke-oven gas

(c) Blast furnace gas

(d) Producer gas

2. Write short notes on the following : *2×5=10*

(a) Nuclear Energy

(b) Ocean Energy

3. Explain the following methods to increase the efficiency of Rankine cycle :

   (a) Lowering the condenser pressure

   (b) Superheating the steam

   (c) Increasing the boiler pressure *3+3+4=10*

4. Explain with a neat diagram the working principle of a Binary vapour cycle. *10*

5. (a) What are the various types of draughts used in the power plants ? *5*

   (b) What are the advantages of artificial draught over natural draught ? *5*

6. Describe the following with neat sketches : *2×5=10*

   (a) LaMont Boiler

   (b) Benson Boiler

7. (a) Discuss the advantages of the steam turbine over the reciprocating engine. *5*

   (b) Describe the performance parameters of a steam turbine. *5*

8. (a) What are the principal parts of a nuclear reactor ? Explain each part in brief. *5*

   (b) Why is sheilding of a reactor necessary ? What do you understand by thermal shielding ? *5*

9. (a) What are the main types of gas turbine combustion chambers ? Discuss their merits and demerits. *5*

(b) Draw a line diagram to show the layout of a diesel power plant and describe it in brief. *5*

10. (a) Name and describe the types of dams used for hydro-electric power plants. *5*

(b) List the various costs involved in the power plants. *5*