Cat. No: Meen 2204   Marks: 50

Title: Boiler and Steam Engineering (1+1)   Time : 2 hours

I. Fill up the blanks / State True or False: (10 x 1=10)

1. Dryness fraction of dry saturated steam is --------------

2. Calorific value of diesel is approximately -------------- kJ/kg.

3. -------------- is used for finding the constituents of flue gas.

4. Cochran boiler is an example for -------------- tube boiler.

5. Natural draught is produced by means of --------------

6. 1 mm of water is equivalent to -------------- N/m^2

7. Cornish boilers are multi-tube boilers (True/False)

8. In natural circulation steam boiler, the circulation of water is obtained by means of pump (True/False)

9. 150 % theoretical air means 50 % excess air (True/False)

10. Specific heat of superheated steam is lower than that of water (True/False)

II. Write short notes on ANY FIVE: (5x 2=10)

1. Gauge pressure and absolute pressure.

2. What are the requirements of good fuels.

3. Sensible heat and latent heat.

4. Dryness fraction.

5. Natural draught.

6. Define LCV and HCV.

7. What is mollier diagram?

III Write answers on ANY FIVE: (5 x 4=20)

1. What are the functions of boiler mountings.

2. Explain about boiler accessories.

3. Explain the working principle of Orsat apparatus.

4. Explain about efficiency of boiler.

5. Explain the phase change of pure substance with the help of P-T diagram.

6. Explain how wet steam, dry steam and superheated steam is produced.

7. Briefly explain the working of simple vertical boiler.

IV. Write essay on any ONE   (1 x 10=10)

1. Explain the experimental determination of calorific value of fuel by Bomb Calorimeter with neat sketch.

2. With neat sketch explain the working of Cochran boiler.

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