

KERALA AGRICULTURAL UNIVERSITY

B.Tech (Food.Engg) 2012 Admission

IVth Semester One time Special Re-Examination-June -2016

Cat. No: Meen. 2204

Marks: 80.00

Title: Boiler and Steam Engineering (1+1)

Time: 3 hours

I. Fill up the blanks: (10x1=10)

1. The property of a system is one whose value does not depend up on the mass of the system is called _____
2. Calorific value of Anthracite is approximately _____
3. Thermal efficiency of a good steam generator may be _____
4. Normal boiling point of oxygen is _____
5. Calorific value of gaseous fuel can be found by _____
6. _____ is normally used for determining the higher calorific value of solid fuels.
7. Component of boiler installation to recover the heat of exhaust gases before furnace is called _____
8. For Locomotive boilers the draught is produced by _____
9. The O₂ percentage by weight in air is _____
10. The datum for absolute pressure is _____

II. Write short notes / answers on ANY TEN (10x3=30)

1. Explain gaseous fuels.
2. What is mean by dryness fraction of steam?
3. Explain the term "Boiler draught".

4. Explain the function of Economizer in steam boiler installation
5. Explain about Atmospheric pressure, Absolute pressure and gauge pressure
6. What is the function of a feed check valve?
7. What is mean by saturation temperature and saturation pressure?
8. Define mol, Kilo mol and mol fraction.
9. Explain about sensible heat and latent heat.
10. A locomotive boiler has no chimney. How is the draught produced for combustion of coal?
11. Name the safety valves used in boilers
12. Explain the location of fusible plug in steam boilers.

III.

Write short essays on ANY SIX of the following:

(6x5=30)

1. Define Calorific value of fuel and its classifications.
2. Explain the difference between externally fired and internally fired steam generators.
3. Discuss the main advantages of artificial draught systems over natural draught system.
4. Discuss how the steam generators are classified, give examples of each classification.
5. Explain the function of water level indicator for a boiler.
6. What are the factors that influencing the performance of boilers?
7. Explain how the wet steam, dry saturated steam, and super heated steam is produced.
8. Explain the difference between Dead-weight safety valve and spring loaded safety valve.

IV.

Write essay on ANY ONE

(1x10=10)

1. Explain the term "Chimney efficiency" Derive equation for the same.
2. With the help neat sketch, explain the construction and working of Lancashire Boiler.