# KERALA AGRICULTURAL UNIVERSITY

**B.Tech.Food Engg. 2013 Admission**

**One Time Re-examination-February - 2017**

**Cat. No: Meen. 2205** **Marks: 50**

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

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

1. The internal energy of a system is a function of ----------
2. The function of ---------- in boilers is used to remove sludge or sediments from drum.
3. The Babcock and welcox boiler is a typical example of ---------- tube boiler.
4. The super heater is used in boilers to extract heat from ----------
5. Locomotive boilers ar best suited to meet ----------
6. The function of injector used in small capacity boiler is to pump fuel.
7. A boiler in India confirm to safety regulations of IBR.
8. Atmospheric pressure (1 atm) is specifically 76 mm of mercury.
9. Super heating of steam is done at constant pressure.
10. The chimney in a power plant is for reducing pollution.

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

1. Dryness fraction of steam.
2. Differentiate wet steam and superheated steam.
3. Boiler mounting and accessories.
4. Differentiate sensible heat and latent heat.
5. Differentiate HCV and LCV.
6. Economizer in boilers.
7. Requirements of good fuel.

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

1. Explain how the wet steam, dry steam and super heated steam is produced.
2. What are factors influencing the performance of boiler?
3. What is meant by draught ? Differentiate induced draught and forced draught.
4. Explain theory of combustion.
5. Explain how the steam generators are classified, give examples of each classification.
6. Explain flue gas analysis by Orsat apparatus.
7. How will you determine the diameter and height of chimney.

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

1. Describe the bomb calorimeter method to find the calorific value of a fuel with a neat sketch.
2. Explain with neat sketch the construction and working of a Lancashire boiler.

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