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B.E./ B.Tech. (Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL/MAY 2013

AGRICULTURAL ENGINEERING BRANCH

EIGHTH SEMESTER

AI 9030 – BIOENERGY RESOURCE TECHNOLOGY

(REGULATIONS: 2008)

Time: 3 hours

Max Mark: 100

Answer ALL Questions

Part – A (10x 2 = 20 marks)

1. What is biostill?
2. If the ash content of the biomass is found to be 9%, can you recommend the biomass for bioenergy production? Write suitable reasons
3. The digester temperature is maintained at 15°C it will take one year to complete the digestion of cattle waste. If the digester is operating at 10°C how long it will take for complete digestion?
4. The dung from one cattle can produce 0.4m³ gas per day when the retention time is 100 days and temperature is 30°C. Calculate the digester volume and biogas yield when dung from 10 cattle is used.
5. Write four biogas appliances
6. The size of the biogas plant is 2m³ and the quantity of cattle dung required is 50 kg per day, the spent slurry produced is 24 kg per day. Calculate the dung required and the size of the biogas plant to get 48kg spent slurry per day
7. What is HHV?
8. What are the applications of enzyme inhibitors?
9. A 100V light bulb is left accidentally an overnight (8 hours).How much energy does it consume?
10. What is briquetting?

Part – B (5 x 16 = 80 marks)

11. a. Write elaborate notes on biomass conversion processes
12. a. Explain in detail the properties of biomass

OR