

Centre for Rural Development & Technology
Rural Energy system (RDL 722)
Major 10.05.2018

Time – 1 hr

MM : 30

Part A

1. Discuss your visit for term paper in a village and what are your learnings about rural energy ? 4
2. Why is municipal solid waste management such a big problem in developing countries like India in comparison to Sweden? What are the steps that can be taken by you to initiate waste management in your apartment/complex? 3
3. Elucidate the technologies that can be used for recovering energy from municipal solid waste? 3
4. What is GOBAR Dhan scheme of the government? how it will be helpful in rural energy aspects and Swachh Bharat? 5
5. Define following terms used in wind energy technology; i) Isovents, ii) Isodynes, iii) Cut-in-speed, iv) Furling speed, v) Yaw control. Calculate the theoretical power available in wind with following data; rotor diameter as 5 m, wind velocity as 20 m/s. assume standard data for air properties. 6

PART B

6. Write approximate chemical formula of de-oiled cake and estimate amount of minimum water required and maximum methane produced per ton of de-oiled cake. 5
7. Draw a neat flow chart, showing the sequence of thermo-chemical processes possible during thermo-chemical gasification of Biomass. 4