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 **Reg. No. :**

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| **Question Paper Code: 57A01** B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020Seventh SemesterAgriculture Engineering15UAG701 **-** BIO-ENERGY RESOURE TECHNOLOGY (Regulation 2015) |
| Duration: 1.15 hrs Maximum: 30 Marks |
| PART A - (6 x 1 = 6 Marks)**(Answer any six of the following questions)** |
| 1. | The equipment used to determine the volatile content of fuel is \_\_\_\_ | CO1- R |
|  | (a) Hot air oven  | (b) Muffle furnace  |
|  | (c) Bomb calorimeter  | (d) Elemental analyser |
| 2. | About \_\_\_\_\_\_\_\_ kWh of electricity can be generated from 1000 kg of coal. | CO1- R |
|  | (a) 1460 | (b) 2460 | (c) 3460 | (d) 5460 |
| 3. | The dialysing time of haemodialysis is |  CO2- U |
|  | (a) Maltase  | (b) Invertase | (c) Diastase | (d) Zymase |
| 4. | Deenabandhu biogas plant is \_\_\_\_\_\_\_\_\_\_\_\_\_type plant. |  CO2- R |
|  | (a) Fixed  | (b) Floating | (c) Submerged  | (d) Horizontal |
| 5. | Thermal degradation of biomass in the absence of oxygen is called \_\_\_\_ | CO3- R |
|  | (a) Combustion  | (b) Gasification | (c) Incineration  | (d) Pyrolysis |
| 6. | Daily requirement of biogas for cooking per person is \_\_\_\_\_\_\_\_ | CO3- R |
|  | (a) 0.10 to 0.20  | (b) 0.20 to 0.30 | (c) 0.30 to 0.40  | (d) 0.40 to 0.50 |
| 7. | Cogeneration concept is not applicable to which type of industry? | CO4- R |
|  | (a) Sugar | (b) Paper and Pulp | (c) Refractory  | (d) Refinery |
|  |  |  |  |  |
| 8. | \_\_\_is a transportation fuel that can be produced from vegetable oil and animal fats | CO4- R |
|  | (a) Biogas | (b) Bio oil | (c) Bio-diesel  | (d) Bio-ethanol |
| 9. | Replacement of electric heaters by steam heaters is\_\_\_\_\_\_\_\_\_ | CO5- R |
|  | (a) Energy substitution  | (b) Energy conservation |
|  | (c) Fuel substitution  | (d) Energy efficiency measure |
| 10. | A thermal insulator is an \_\_\_\_\_\_\_\_ | CO5- R |
|  | (a) Good conductor of heat and has high thermal conductivity |
|  | (b) Poor conductor of heat and has high thermal conductivity |
|  | (c) Good conductor of heat and has low thermal conductivity |
|  | (d) Poor conductor of heat and has low thermal conductivity |
|  | PART – B (3 x 8= 24 Marks)**(Answer any three of the following questions)** |
| 11. | Explain in detail about the proximate and ultimate analysis of Biomass. | CO1- U | (8) |
| 12. | **Explain the process and stages of ethanol production from sugary substrates? Write about the techniques to characterize the liquid fuel.** | CO2 U | (8) |
| 13. | **Describe in detail about fixed Dome and floating drum Biogas plants with neat sketch.** | CO3- U | (8) |
| 14. | What is densification? What are all the factors affecting densification process? Explain about different methods of densification process with neat sketch**?** | CO4- U | (8) |
| 15 | **Discuss in detail about cogeneration cycle in a sugar industry with example and neat sketches.**  | CO5- U | (8) |