Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **14ME2052** | **Duration :** | **3hrs** |
| **Sub. Name :** | **BIOMASS ENERGY SYSTEMS** | **Max. Marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Explain any five biomass resources in detail. | CO1 | 10 |
| b. | Describe the various biochemical conversion process of biomass. | CO3 | 10 |
| **(OR)** | | | | |
| 2. | a. | Discuss the thermochemical conversion process of biomass in detail. | CO3 | 10 |
| b. | Explain the working principle of a downdraft gasifier with neat sketch. | CO2 | 10 |
|  |  |  |  |  |
| 3. | a. | Explain the method used for ethanol production from sugar cane. | CO3 | 10 |
| b. | List down the applications of gasifier. | CO3 | 10 |
| **(OR)** | | | | |
| 4. | a. | Discuss the method used for methanol production from biomass waste. | CO3 | 10 |
| b. | Explain the working principle of a floating drum type biogas plant. | CO3 | 10 |
|  |  |  |  |  |
| 5. | a. | Discuss the problems related to biogas plants.. | CO3 | 10 |
| b. | Mention the different plants proposed for energy plantation in India. | CO2 | 10 |
| **(OR)** | | | | |
| 6. | a. | Explain the performance of biogas in a CI engine. | CO3 | 10 |
| b. | Give a list of the materials used for biogas generation. | CO3 | 10 |
|  |  |  |  |  |
| 7. | a. | Summarize the advantages and disadvantages of biological conversion of solar energy. | CO2 | 10 |
| b. | Describe the method of hydrogen generation from micro algae. | CO2 | 10 |
| **(OR)** | | | | |
| 8. | a. | Explain the working principle of a wood fuelled stove. List down its advantages and disadvantages. | CO2 | 10 |
| b. | Describe the working principle of a high rate digester for industrial waste water treatment. | CO3 | 10 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Discuss the advantages and disadvantages of biomass conversion systems. | CO3 | 10 |
| b. | Summarize the applications of biogas. | CO3 | 10 |