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



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – April/May– 2017**

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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. |  | Questions | Course  Outcome | Marks |
| 1. |  | Explain the various biomass resources in detail. | CO1 | 20 |
| (OR) | | | | |
| 2. |  | What is thermo chemical conversion of biomass? Explain the thermo chemical conversion processes in detail. | CO2 | 20 |
| 3. |  | Describe the various biogas plants with neat sketches. | CO2 | 20 |
| (OR) | | | | |
| 4. |  | Explain the method of ethanol production from sugarcane with a help of flow chart. | CO2 | 20 |
| 5. |  | What is pyrolysis? Discuss the effect of temperature, heating rate, particle size, and nitrogen gas flow rate on biomass pyrolysis products yield. | CO3 | 20 |
| (OR) | | | | |
| 6. |  | What is meant by fluidization? Explain the various fluidization process in detail with neat sketches. | CO2 | 20 |
| 7. |  | What is gasification process? Explain the types of gasifier with sketches. | CO2 | 20 |
| (OR) | | | | |
| 8. |  | Discuss the performance and emission characteristics of wood gas in compression ignition engine? Draw the experimental lay out also. | CO3 | 20 |
|  | | **Compulsory:** |  |  |
| 9. |  | Describe any one method of electricity procuction from biomass waste? Draw the flow chart also. | CO3 | 20 |

ALL THE BEST