

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: MTECH
BRANCH: Mechanical Engineering

SEMESTER : II
SESSION : SP/22

SUBJECT: ME550 BIOCONVERSION & PROCESSING OF WASTE

TIME: 2Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
-

- Q.1(a) Illustrate in details that biomass is a unique renewable resource. [5]
Q.1(b) Explain the adverse health and environmental impacts due to improper handling of solid waste. [5]
- Q.2(a) Role of bio-technology in treatment of waste. [5]
Q.2(b) What is the importance of 4Rs principal in solid waste management. [5]
- Q.3(a) Write notes on pyrolysis and gasification. [5]
Q.3(b) Write briefly thermo chemical conversion of biomass into value added product. [5]
- Q.4(a) Write note on waste bin monitoring technology using global System of Mobile (GSM). [5]
Q.4(b) What do you understand by biodegradable and non-biodegradable plastics. Discuss in detail the recycling of plastics into value added products. [5]
- Q.5(a) What do you understand by Vermi-composting(Rapid composting). What are the advantages and disadvantages of Vermi-composting. [5]
Q.5(b) Explain the working, importance and economics of a biogas plant. [5]

:::::29/04/2022 E:::::