


Name:			
Enrolment No:			
UNIVERSITY OF PETROLEUM AND ENERGY STUDIES End Semester Examination, May 2022			
Course: Biomass Conversion Technology Program: M. Tech (Renewable Energy Engineering) Course Code: EPEC 7051		Semester: 2nd Time : 03 hrs. Max. Marks: 100	
Instructions: Kindly go through the choices between questions wherever applicable.			
SECTION A (5Qx4M=20 Marks)			
S. No.		Marks	CO
Q 1	What area of forest is needed to offset the CO ₂ emissions from a power station or from running a car?	4	CO1
Q 2	What types of trees and crops are best as carbon sinks or for bioenergy and wood production?	4	CO1
Q 3	Can land be managed simultaneously as a carbon sink and for bioenergy and fibre production?	4	CO2
Q 4	How does management of land as a carbon sink or for bioenergy production affect biodiversity and other environmental characteristics?	4	CO3
Q 5	Explain thermochemical methods and their applications	4	CO2
SECTION B (4Qx10M= 40 Marks)			
Q 6	Explain the importance of Biomass Briquetting and Pelletization. Explain the effects of Feed and operational parameters on it.	5+5	CO1
Q 7	Explain the properties of output gases (mainly producer gas). Explain the industrial application of gasifier.	10	CO3
Q 8	Is the technology available now for bioenergy to play a role in reducing atmospheric CO ₂ ?	5+5	CO4
Q 9	Explain the process of slow and fast pyrolysis for solid and liquid fuel Production. Or. How great is the potential to reduce greenhouse gas emissions by using more bioenergy and through carbon sinks in biomass?	10	CO5
SECTION-C (2Qx20M=40 Marks)			
Q 10	Explain the Composting and Vermicomposting Biomass productivity, Energy plantation and power programme.	10+10	CO5

	What are the Potential, Process and technologies of pelleting in Biomass Technology?		
Q 11	<p>Characteristics of Briquettes and their use. Explain the process of pyrolysis, its types, products and usage. Use case study wherever applicable.</p> <p style="text-align: center;">Or,</p> <p>Explain the process of slow, medium and fast pyrolysis. Considering a present scenario, explain how the process of slow and fast pyrolysis create a major impact for solid and liquid fuel Production</p>	10+10	CO4