

*Each question carries 10 marks. Answer any TEN questions*

1. Briefly describe any one feedstock for biofuel production.
2. What are lignocellulosic feedstocks used for biofuel production?
3. What is the preferred feedstock for the production of bioethanol? Why? (3+7)
4. Mention the advantages of *Zymomonas mobilis* as a producer organism of bioethanol.
5. What is Brix value? Explain the operation of an integrated sugar mill-ethanol fermentation plant with a block diagram. (3+7)
6. Differentiate between dry milling and wet milling processes for bioethanol production.
7. What are the two platforms utilized for bioethanol production from lignocellulosic feedstocks?
8. Briefly describe biophotolysis for the production of biohydrogen.
9. Briefly explain dark and photo fermentation for the production of biohydrogen.
10. How will you determine the volume of gas generated and the composition of the gas produced during biohydrogen production?
11. Why is biodiesel considered more environmentally acceptable than conventional petroleum-derived diesel?
12. Write the transesterification reaction and mention its application in the production of biodiesel?
13. Compare raceway ponds and photobioreactors for the cultivation of microalgae required for the production of biodiesel.