

Enroll. No.

Q. P. Code
UT3127

Unit Test - II (2025-26)

Third Year B. Tech.

Course Code: OE349

Course Name: OE-I Non-Conventional Energy Sources

Date : Friday 13/09/2025

Time : 10:30 To 11:30

Max. Marks: 25

- Instructions:
- 1) All questions are compulsory.
 - 2) Figures in rounded () brackets within the question, indicate scheme of marking for respective part of the question, whereas, figures in the first right column indicate total marks for that whole question.
 - 3) CO is the index number of the Course Outcome statement.
 - 4) The Bloom's taxonomy level (BL) for 1,2,3,4,5 and 6 is remember, understand, apply, analyze, evaluate and create respectively.
 - 5) Assume suitable data if necessary.
 - 6) Use of non-programmable calculator is allowed.

	Marks	CO	BT Level
Q.1 Answer the following:			
a) Compare bio-energy with solar and wind energy in terms of availability, storage, and scalability. (each 2 marks)	6	CO5	L4
b) Illustrate with a diagram the working of a typical biogas plant and label all key components.	6	CO3	L3
<u>OR</u>			
b) Draw and label the schematic diagram of bio-mass gasifier (2 marks). Explain how gasification takes place inside it (4 marks).	6	CO3	L3

Q.2 Answer the following:			
a) Illustrate with a neat sketch (2 marks) the working principle of a Horizontal Axis Wind Turbine (HAWT) (4 marks).	6	CO3	L3

<u>OR</u>			
a) Discuss the advantages and disadvantages of Vertical Axis Wind Turbines (VAWT).	6	CO3	L3
b) Following is the wind data of three places A, B and C:	7	CO6	L4
i) Place A : Wind speed = 5 m/s			
ii) Place B : Wind speed = 6 m/s			
iii) Place C = Wind speed = 9 m/s			
From above three sites, which site you will select for wind turbine installation? Justify your answer in line with WPD.			

