

13. a) Explain the following controls in wind turbine
- (i) Yaw control 4,K3,CO4
 - (ii) Pitch control 5,K3,CO4
 - (iii) Teethering control 4,K3,CO4
- OR**
- b) (i) Sketch the various types of blades in the wind turbine. 7,K3,CO4
(ii) Write the essential features of a probable site for a wind farm. 6,K3,CO4
14. a) Explain below bio-chemical biomass conversion process
- (i) Anerobic digestion. 6,K3,CO4
 - (ii) Fermentation process. 7,K3,CO4
- OR**
- b) Explain about Updraft and Down draft gasifiers. 13,K3,CO5
15. a) Explain the following:
- (i) OTEC open cycle. 7,K3,CO6
 - (ii) OTEC closed (Anderson) cycle. 6,K3,CO6
- OR**
- b) Sketch a schematic and show the liquid dominated and vapor dominated geo-thermal energy harvesting process. 13,K3,CO5

PART - C (1 × 15 = 15 Marks)

16. a) Examine the steady flow energy equation for wind turbine to obtain maximum power of a wind turbine for given incoming velocity. 15,K3,CO3
- OR**
- b) Explain how the biogas contributing to overall available renewable energy source? Explain about the stages in methane gas production process. 15,K3,CO5