

Exam. Code: 0943

Sub. Code: 6745

2122

B.E. (Mechanical Engineering)

Seventh Semester

MEC-705 (c): Renewable Energy Sources

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Section.

x-x-x

1. (a) What is meant by AM0 and AM1? 2*5
(b) What is anaerobic digestion?
(c) Define the following: Yaw active and yaw fixed machines?
(d) How does albedo affect solar radiations?
(e) Differentiate between beam and diffuse radiation.

Section A

2. (a) Discuss your perspective on the energy planning issues aiming to bridge the gap between the energy demand and energy supply situation in India. 5
(b) Describe the working of Angstrom compensation Pyrheliometer with a neat sketch. 5
3. (a) Draw the neat sketch of a parabolic trough solar collector. Out of N-S/E-W orientation, which one is preferred for this collector and why? 5
(b) Draw a schematic diagram of active solar space heating system and explain its working. 5
4. (a) Discuss various biomass conversion technologies. 5
(b) Discuss the working principle, applications and limitations of fluidized-bed bioreactor.. 5

Section B

5. (a) Enlist and explain the factors affecting the performance of biogas digester. 5
(b) Sketch the diagram of a HAWT and explain the functions of its main components. 5
6. (a) Describe the working of OTEC plant operating on Claude cycle. 5
(b) What are the relative advantages and limitations of floating and shore-based OTEC plants? 5
7. (a) Discuss important factors to be considered while selecting a site for power generation from geothermal energy. 5
(b) Describe the working of double basin tidal plant. 5

x-x-x