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Question Paper Code: 58763

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2022

One Credit

Mechanical Engineering

15UME863-SOLAR ENERGY

(Regulation 2015)

Duration: 1.30 hours

Maximum: 50 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

- The function of a solar collector is to convert _____
 - Solar Energy into Electricity
 - Solar Energy radiation
 - Solar Energy thermal energy
 - Solar Energy mechanical energy
- Solar air heaters used for
 - Industrial Purpose
 - Drying for agricultural
 - Space heating
 - Space heating
- Which of the following is a disadvantage of most of the renewable energy sources?
 - Highly polluting
 - High waste disposal cost
 - Unreliable supply
 - High running cost
- Flat plate collector absorbs _____
 - Direct radiation only
 - Diffuse radiation only
 - Direct and diffuse both
 - All of the above
- The Collector Concentrator mirror reflector having the shape
 - Cylinder
 - Tube
 - Cylindrical parabola
 - Sphere

6. Horizontal axis and vertical axis are the types of:
- (a) Nuclear reactor (b) Wind mills (c) Biogas reactor (d) Solar cell
7. Steam reforming is currently the least expensive method of producing:
- (a) Coal (b) Biogas (c) Hydrogen (d) Natural gas
8. Common energy source in villages is
- (a) Electricity (b) Coal (c) Sun (d) Wood and animal dung
9. Direct Solar energy is used for
- (a) Water heating (b) Distillation (c) Drying (d) All of the above
10. Which is the parameters affecting the life cycle cost of Solar system
- (a) Depreciation rate and final salvage value (b) Operating costs
- (c) Taxes (d) Furnace

PART - B (2 x 20 = 40 Marks)

11. (a) Explain with neat sketch any two type concentrating collectors in detail. (20)
- Or
- (b) Explain the major components of photovoltaic system with neat sketch. (20)
- 12 (a) Explain with a neat diagram working of a solar Still. (20)
- Or
- (b) Explain the following application of solar Energy in Agriculture
- (i) crop and Grain Drying
- (ii) Water Pumping. (20)