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Question Paper Code: U8763

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2024

One credit

Mechanical Engineering

21UME863 – SOLAR ENERGY

(Regulations 2021)

Duration: 1.30 hours

Maximum: 50 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Flat-Plate Collector (FPC) is CO1-U
 - (a) Simple design
 - (b) Less weight
 - (c) Complicated design
 - (d) Less space required
2. The Collector Concentrator mirror reflector having the shape CO1-U
 - (a) Cylinder
 - (b) Cylindrical parabola
 - (c) Tube
 - (d) Sphere
3. The function of a solar collector is to convert..... CO1-U
 - (a) Solar Energy into Electricity
 - (b) Solar Energy radiation
 - (c) Solar Energy thermal energy
 - (d) Solar Energy mechanical energy
4. Conventional forced-air, gas-heating system would include the cost of CO1-U
 - (a) Furnace
 - (b) Taxes
 - (c) Salvage value
 - (d) None
5. Which of the following is a non-renewable resource? CO1-U
 - (a) Coal
 - (b) Forests
 - (c) Water
 - (d) Wildlife
6. Solar air heaters used for CO1-U
 - (a) Industrial Purpose
 - (b) Drying for agricultural
 - (c) Space heating
 - (d) All of the above

7. Solar system future cost is CO1-U
 (a) Repair (b) Insurance (c) Taxes (d) All of the above
8. Solar air heaters used for CO1-U
 (a) Industrial Purpose (b) Drying for agricultural
 (c) Space heating (d) All of the above
9. Which is the parameters affecting the life cycle cost of Solar system CO1-U
 (a) Depreciation rate and final salvage value (b) Operating costs
 (c) Taxes (d) Furnace
10. Which is the variable cost CO1-U
 (a) Collector (b) Solar components (c) Sensor devices (d) None of above

PART – B (2 x 20 = 40 Marks)

11. (a) Explain the flat plate collector with a neat sketch CO2- U (20)
 Or
 (b) Demonstrate with a neat diagram working of Solar Ice Maker CO2- U (20)
12. (a) Compare the mirror strip collector and Fresnel collector with a neat sketch. CO2-U (20)
 Or
 (b) Describe with a neat diagram working of a solar cooker. CO2-U (20)