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**Question Paper Code: 98763**

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2021

One Credit

Mechanical Engineering

19UME863-SOLAR ENERGY

(Regulation 2019)

Duration: 1.30 hours

Maximum: 50 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

- Direct Solar energy is used for
  - Water heating
  - Distillation
  - Drying
  - All of the above
- 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
- Global radiation =
  - Direct radiation – Diffuse Radiation
  - Direct radiation + Diffuse Radiation
  - Direct radiation / Diffuse Radiation
  - Diffuse Radiation / Direct radiation

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. The scattered solar radiation is called  
(a) Direct Radiation                      (b) Beam Radiation  
(c) Diffuse radiation                      (d) Infrared Radiation
10. Which is most common source of energy from which electricity is produced?  
(a) Hydroelectricity                      (b) Wind energy            (c) Coal            (d) Solar energy

PART - B (2 x 20 = 40 Marks)

11. (a) Explain in detail about the working of Flat plate collector with neat sketch.            (20)  
Or  
(b) Explain in detail about solar Air conditioning and refrigeration systems            (20)
- 12.(a) Explain in detail about concentrating solar collectors with neat sketch.            (20)  
Or  
(b) Explain in detail about working of a solar Still?            (20)