

No. of Printed Pages : 3

**MRW-005**

**Master of Science (Renewable Energy  
and Environment)**

**(MSCRWEE)**

**Term-End Examination**

**June, 2024**

**MRW-005 : SOLAR ENERGY AND APPLICATIONS**

*Time : 3 Hours*

*Maximum Marks : 70*

**Note :** Attempt any **five** questions.

1. (a) Explain the terms absorptivity, reflectivity and transmissivity of radiant energy. 7
- (b) Describe I-V characteristics of a solar cell. How does temperature affects the efficiency of a solar cell ? 7
2. (a) Give the classification of various types of solar cell ? 7

- (b) Elaborate the advantages and disadvantages of concentrating and non concentrating solar thermal collectors. 7
3. (a) Compare the features of on grid, and off grid PV system. 7
- (b) Explain about basic requirements for installing a solar water pumping system. 7
4. (a) Explain the working principles of active and passive solar water heating system.
- (b) Write down important requirements of direct gain passive system for a building. 7
5. (a) Describe the main features of Hybrid building systems.
- (b) How the green house effect could be reduced ? Discuss in detail.

**P. T. O.**

[ 3 ]

MRW-005

6. (a) Describe the functioning of a solar dryer.  
Define the efficiency ( $\eta$ ) of a solar air collector
- (b) Describe the various components of a solar thermal power plant.
7. Write short notes on any four of the following :

$$(4 \times 3\frac{1}{2} = 14)$$

- (a) Classification of solar stills
- (b) Solar cookers
- (c) PV modules and PV array
- (d) Solar Air Heating system
- (e) Construction of solar module
- (f) Solar passive cooling system.

\*\*\*