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MRW-003

**MASTER OF SCIENCE (RENEWABLE
ENERGY AND ENVIRONMENT)
(MSCRWEE)**

Term-End Examination

December, 2024

MRW-003 : RENEWABLE ENERGY SYSTEM

Time : 3 Hours

Maximum Marks : 70

Note : (i) Attempt any **seven** questions.

(ii) All questions carry equal marks.

1. Describe the various renewable energy resources available in India and its potential to supplement the conventional energy sources. 10
2. Discuss in detail the different types of coal mining process. 10
3. Discuss selection and design criteria of turbines for hydropower. 10

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4. Define solar cell efficiency, quantum efficiency and spectral responsivity and discuss them. 10
5. Derive the expression for power extracted from wind considering Betz model of a wind turbine. 10
6. Describe the expression for energy and power in single basin tidal system. 10
7. Discuss the energy analysis of hot aquifer type geothermal reserves. 10
8. Write a note on Transduction mechanism of vibration energy harvester. 10
9. What are the components of a PV system to take on the A. C. loads ? Draw a schematic layout of components and explain. 10
10. Write short notes on any *two* of the following :

2×5=10

- (i) Petroleum refining process
- (ii) Ocean thermal electric power generation
- (iii) Techniques of biomass assessment
- (iv) Global radiation

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