Avinashilingam Institute for Home Science and Higher Education for Women

Deemed to be University Estd. u/s 3 of UGC Act 1956, Category A by MHRD (now MoE)
Re-accredited with A++ Grade by NAAC. CGPA 3.65/4, Category I by UGC
Coimbatore - 641 043, Tamil Nadu, India

Master's Degree Examination – May 2025
II Semester

Class : I P.G. **Time: 3 Hours**
Major : Interior Design and Resource Management **Max. Marks: 100**

23MIRC09 Renewable Energy

Course Outcomes:
CO1: Appraise the significance and use of energy in different forms
CO2: Use various renewable energy devices and conserve fossil fuels
CO3: Live as good responsible citizens contributing to global energy conservation endeavors
CO4: Enjoy the benefits of using renewable energy sources
CO5: Formulate projects and approach funding agencies in future

Part A **10 x 1 = 10**
Choose the Correct Answer

1. Tidal power is a _____ form of energy. CO1K1
   a. Conventional b. Non-conventional c. Non–renewable d. Geothermal

2. Which of the following is not a secondary form of energy? CO1K1
   a. Electricity b. Wind c. Coal briquette d. Diesel

3. Pyranometer is used to measure CO2K1
   a. Wind speed b. Tidal height c. Geothermal heat d. Solar radiation

4. Which of the following devices operates by using the Thermosiphon principle? CO2K2
   a. Solar water heater b. Solar cooker c. Green house d. Wind mill

5. A part of wind mill that is located on top of the tower and can turn 360° on its own axis, depending on the direction of the wind is CO2K1
   a. Blade b. Rotors c. Nacelle d. Hub

6. An example of geothermal energy is CO1K2
   a. Hot springs b. Wind mills c. Distillators d. Solar PV systems

7. The major component of biogas is CO4K1
   a. Carbon dioxide b. Nitrogen c. Hydrogen d. Methane

8. Fermentation process is the _____ conversion of biomass. CO2K2
   a. Physiochemical b. Chemical c. Biochemical d. Thermal

9. The Indian Renewable Energy Development Agency Limited provides _____ to generate electricity. CO5K2
   a. Technical support b. Man power c. Space d. Financial support

10. Solar Energy Corporation of India is established in the year CO5K2
    a. 2011 b. 1990 c.2020 d. 2015

Part B **5 x 6 = 30**
Answer ALL questions
Each answer should not exceed 400 words or two pages

11.a. Analyse the ways by which energy security can be enhanced. CO1K4

(or)

11.b. Describe the energy consumption pattern of India. CO1K2

12.a. Explain the different types of solar thermal collectors. CO2K2

(or)

12.b. Discuss the working principles of a solar green house. CO2K3

13.a. Describe the merits and challenges of wind energy. CO2K2

(or)

13.b. Summarise the types of geothermal resources. CO2K2

14.a. Define biomass. List the advantages and disadvantages of biomass. CO4K2

(or)

14.b. Outline the various factors affecting biogas production. CO4K4

15.a. Explain the role of the National Institute of Solar Energy. CO5K2

(or)

15.b. Point out the main objectives of IREDA. CO5K4

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Part C **5 x 12 = 60**

Answer ALL questions

Each answer should not exceed 800 words or four pages

16.a. Classify energy resources with suitable examples. CO1K2

(or)

16.b. Explain the impact of energy consumption on environmental sustainability and the remedies to reduce the impact. CO1K3

17.a. Illustrate and explain the working principles of box type and parabolic type solar cookers. CO2K3

(or)

17.b. Discuss the parts and operations of solar dryer and solar water heater. CO2K2

18.a. Explain the components of a wind mill and their functions. CO2K4

(or)

18.b. Describe the working principles of tidal plants with illustrations. CO2K3

19.a. Categorise the different methods of biomass conversion techniques. CO3K4

(or)

19.b. Describe the parts and working principles of floating drum type biogas plant with diagram. CO3K4

20.a. Explain the objectives of the International Renewable Energy Agency. CO5K4

(or)

20.b. Identify the role of National Institute of Wind Energy and Solar Energy Corporation of India. CO5K2

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