

SUBJECT CODE : 19ID/IC/RE55

B.A / B.Sc. DEGREE EXAMINATION, NOVEMBER 2022
FIFTH SEMESTER

COURSE : INTERDISCIPLINARY CORE
PAPER : RENEWABLE ENERGY AND ENERGY ECONOMICS
TIME : 3 HOURS **MAX. MARKS : 100**

SECTION - A

I. ANSWER ALL QUESTIONS IN 50 WORDS EACH. (10x3=30)

1. State the energy conservation theorem with any example.
2. Any three difference between renewable and non-renewable energy.
3. Define Solar constant.
4. Explain I-V Curve.
5. Define power of wind
6. State the different indices to measure Energy Efficiency.
7. Illustrate the influence of energy consumption on expanding carrying capacity of the Earth.
8. What is Global Energy Transition Index?
9. Define energy development.
10. Differentiate Human Development Index and Planetary Pressure Adjusted Human Development Index.

SECTION - B

ANSWER ANY SIX OF THE FOLLOWING IN ABOUT 250 WORDS:

(6x5=30)

11. Write a note on flat plate solar collector with suitable diagram.
12. For a family of 4 to 6 members, about 150 litres per day of hot water at 60 °C is sufficient for all domestic needs. Following are the requirements to design the solar water heater, the ambient temperature (T_a -25°C), Daily solar insolation (I – 5.5 kWh/m² -day), Efficiency of solar collector (η -40%) and specific heat of water (c_p – 4.18 kJ/kg-K)
13. Write a note on types of solar collector with suitable diagram.
14. What are the necessary consideration to discern during the site selection process?
15. a. Write a note on need for alternate source of energy.
b. Explain why the energy sector is not perfectly competitive.
16. What are the causes of energy poverty in India? State any two of the recent developments to alleviate energy poverty.
17. Write a note on Energy Security.
18. Bring out the factors that affect fuel prices in India.
19. Explain the concept of Energy Triangle.

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SECTION – C**ANSWER ANY TWO OUT OF FOUR QUESTIONS IN 1000 WORDS: (2 x 20 =40)**

20. (a) Discuss the different types of renewable energy.
(b) Briefly explain the impact of globalization on energy development.
21. (a) Elucidate the working of turbines with suitable diagram.
(b) Using a suitable example explain the process involved in the Cost Benefit Analysis of an Energy Project.
22. (a) Write a short note the working of the solar water heater.
(b) Explain the challenges in the renewable energy sector in India.
23. (a) Discuss the principle, working, advantages and disadvantages of photovoltaic cell.
(b) Explain the impact of renewable energy transition on climate change.
