

Model Question

**MAHATMA GANDHI UNIVERSITY**

V SEMESTER CBCSS EXAMINATION.....YEAR

**PH5D01.2U OPEN COURSE: ENERGY AND ENVIRONMENTAL STUDIES**

**Instructions:**

1. Time allotted for the examination is 3 Hours.
2. Answer **all** questions in Part A. This contains 4 bunches of 4 objective type questions. For each bunch, Grade A will be awarded if all the 4 questions are correct, B for 3, C for 2, D for 1 and E for 0.  
Answer any **5** questions from Part B, any **4** from Part C and any **2** from Part D.
3. Candidates can use .....(type of calculator/tables)

**Part A**

**(Objective/One-word answer type. Weight 1 each)**

**Answer all questions**

**Bunch I**

1. Which one is not a non-conventional energy  
a) Solar energy      b) Wind energy      c) Hydroelectric energy      d) Tidal energy.
2. Which among the following is not a green house gas  
a) CO<sub>2</sub> b) CO      c) SO<sub>2</sub>      d) N<sub>2</sub>O
3. \_\_\_\_\_ is a primary pollutant  
a) Sulfuric acid      b) Carbonic acid      c) Nitrogen oxide      d) Ozone
4. \_\_\_\_\_ is an energy flow mechanism in the ecosystem  
a) Water Cycle      b) Carbon Cycle      c) Oxygen Cycle      d) All of them

**Bunch II**

5. \_\_\_\_\_ is the World Environment Day  
a) March 21    b) June 5    c) September 16    d) April 18
6. What should be the main purpose of Energy Audit?  
a) Energy Conservation    b) Economic conservation    c) Waste management    d) Environment Pollution
7. \_\_\_\_\_ energy of the wave is utilized to spin air turbine to obtain wave energy  
a) Kinetic Energy    b) Potential Energy    c) Nuclear Energy    d) None of the above
8. In the sun energy is released by the mechanism of \_\_\_\_\_  
a) Fusion    b) Fission    c) Recombination    d) None of the above

**Bunch III**

9. LPG is also called  
a) Propane    b) Butane    c) Methane    d) Ethane
10. \_\_\_\_\_ coal is the hardest and has more carbon yielding high energy content  
a) Bituminous    b) Lignite    c) Anthracite    d) Coal Tar
11. \_\_\_\_\_ gas used in refrigerants decrease the ozone content of the atmosphere  
a) CFC    b) CO    c) Methane    d) H
12. Which one is not among 3 R's in Waste management  
a) Recycle    b) Reuse    c) Reduce    d) Repeat

**Bunch IV**

13. Efficiency of a commercially available solar water heater is  
a) 40 to 50 %    b) Above 80%    c) less than 20%    d) 70-80%

**Page 3**

14. Solar cell is basically a

- a) p-n junction diode    b) vacuum diode    c) Transistor    d) Resistor

15. Average solar insolation in our place is of the order of

- a)  $1000 \text{ Wm}^2$     b)  $1000 \text{ Wm}^{-2}$     c)  $1000 \text{ W/m}$     d)  $100 \text{ Wm}^2$

16. Temperature attained in a solar furnace is

- a)  $100^\circ\text{C}$     b) above  $1000^\circ\text{C}$     c)  $100 \text{ K}$     d) less than  $100^\circ\text{C}$

**Part B (Short answer questions-weight 1 each)**

**Answer any 5 questions**

17. What are the control measures for air pollution?

18. Give two examples each for primary and secondary pollutants.

19. What are Hazardous Wastes? Give an Example?

20. What are the various forms of mechanical energy?

21. How are fossil fuels formed?

22. The availability of conventional energy is decreasing. Comment

23. Explain the need of glass covers in solar thermal energy converters.

24. What do you mean by the term solar insolation.

**Part C (Short essay/Problems-Weight 2 each)**

**Answer any 4 questions**

25. Explain the structural and functional aspects of ecosystem.

26. Write a Short note on Energy Audit Concepts?

27. Calculate Energy Wastage in Rupees in a Firm for one Month, if wastage of Energy due to

Wiring per day is  $3 \text{ KWh}$  and unit cost is 3 Rupees?

28. What are the various forms of renewable energy and mention their demerits?

29. How can the public participation improve environmental decision making?

30. Explain the working principle of a solar pond.

**Part D (Essay type questions. Weight 4 each)**

**Answer any 2 questions**

31. Write an essay on remediation of municipal and Industrial waste problems?

32. What is meant by public liability insurance? What regulations are imposed on regulations on vehicles in metropolitan cities to avoid noise and air pollution

33. Write an essay on working of solar water heaters and air heaters and its applications.

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