	INDIAN SCHOOL AL WADI AL KABIR	
Class: X	**Department: SCIENCE 2020-2021** **SUBJECT-PHYSICS**	**Date of submission: 10.05.2020**
Worksheet No:2	**Topic: SOURCES OF ENERGY**	**Note:** **A4 FILE FORMAT** **[PORTFOLIO]**
NAME OF THE STUDENT	**CLASS & SEC:**	**ROLL NO.**

OBJECTIVE TYPE QUESTIONS

1. Dynamo converts the

a. mechanical energy into electrical energy
b. chemical energy into electrical energy
c. heat energy into electrical energy
d. none of the above

2. Which is the major constituent of Bio-gas?

a. Carbon dioxide
b. Methane
c. Hydrogen
d. Hydrogen sulphide

3. In wind mill, the wind speed should be higher than ___ to maintain the required speed of the turbine.

a. 5 km/hr
b. 8 km/hr
c. 12 km/hr
d. 15 km/hr

4. Ocean thermal energy is obtained due to

a. difference in sea level
b. winds blowing from sea
c. temperature difference of sea surface and depth
d. none of the above

5. Energy trapped in earth's crust is

a. Tidal energy
b. Wave energy
c. Geothermal energy
d. thermal energy

6. Assertion (A): Hydro energy is a renewable source of energy.
Reason (R): Hydro energy is inexhaustible.
a) Both A and R are true and R is the correct explanation of A
b) Both A and R are true and R is not correct explanation of A
c) A is true and R is false
d) A is false and R is true.

7. Answer question numbers 7(a) -7(d) on the basis of your understanding of the following paragraph and the related studied concepts.

Year	Solar power generation (TWh)
2013–14	3.35
2014–15	4.60
2015–16	7.45
2016–17	12.09
2017–18	25.87
2018–19	39.27

Solar power in India is a fast developing industry. The country's solar installed capacity reached 34.404 GW as of 29 February 2020. India has the lowest capital cost per MW globally to install solar power plants. Solar electricity generation recorded nearly 3.4% of total utility electricity generation in January 2019. The following table shows the Annual Solar Power Generation of the last six years.

Our country is lucky to receive solar energy for the greater part of the year. It is estimated that during a year India receives the energy equivalent to more than 5000 trillion kWh from the Sun.

7(a). What are Solar cells?
7(b). How much voltage can be developed and how much electricity can be produced by one typical solar cell when exposed to the Sun?
7(c). The future of power generation by solar energy is bright in India. Give reason.
7(d). List two advantages of solar cells.

ONE MARK TYPE QUESTIONS

8. Give three major forms of fossil fuels.
9. Write the energy conversion takes place in a hydro power plant.
10. Name the part of a biogas plant where reactions takes place in the absence of oxygen.
11. List two non-conventional source of energy.
12. Write the name of the substance whose vapours are used to run the turbine of the generator of ocean thermal energy plant.

TWO MARKS TYPE QUESTIONS

13. Define fuel. List any two characteristics that you would look for in a good fuel.
14. Why wind energy farms can be established only at specific locations? Give reasons to support your answer.
15. Distinguish between renewable and non-renewable sources of energy

16. How are the wastes produced in nuclear power plants different from those produced in a thermal power plants? What happens to the waste of a nuclear power plant?

THREE MARKS TYPE QUESTIONS

17. List any three ways in which construction of dams for production of electricity adversely affects the environment of that place.
18. How geothermal energy can be harnessed to produce electrical energy?
19.a. Define tidal energy
    b. Explain how is tidal energy harnessed and write one limitation of the use of tidal energy
20. With the help of a diagram, explain how the design of a box type solar cooker ensures minimum loss of heat from its inside. List its three limitations

FIVE MARKS TYPE QUESTIONS

21. What are solar cells? List the various advantages and limitations of solar cell.
22. What are the environmental consequences of using fossil fuels? Suggest the steps to minimize the pollution caused by various sources of energy including non-conventional sources of energy.
23. State the meaning of "hot spot" in the context of earth crust. What are the merits and limitations of the energy that can be obtained from the deep inside the earth?

PREVIOUS YEAR BOARD QUESTIONS

24. Define nuclear fission. Write the steps involved in generating electricity in a nuclear reactor. (CBSE 2016)
25. State the principle of working of ocean thermal energy conversion plant. Explain how the plant works? Write one essential condition for it to operate properly. (CBSE 2013)
26. Bio-gas is an excellent fuel. Justify the statement by giving two reasons. (CBSE 2015)
27. State any three reasons to justify that LPG is considered an ideal fuel. (CBSE 2014)

OTHER BOARD QUESTIONS (with Hints)

27. What is a solar cell panel? Mention any three applications. (CBSE 2011)
    (Ans:- Solar cell panel -Large number of solar cells connected together in a particular arrangement.
    Applications-Artificial satellites stationed in outer space/ Traffic signals/ Calculator…)
28. Out of two solar cookers, one was covered with a plane glass slab and the other was left open. Which of the two solar cookers will be more efficient and why? (CBSE 2011)
    (Ans:-More efficient- Solar cooker with plane glass slab.
    Reason:-Glass slab allows the heat radiation from sun to enter the solar cooker and does not allow the reflected heat radiation to go outside the box. Thus, heat gets trapped inside the box increases the temperature.)
29. Name four gas commonly present in bio-gas. State two advantage of using this gas over fossil fuels . (CBSE 2010)
    (Ans:- Methane, Carbon dioxide, Hydrogen ad Hydrogen sulphide.
    Advantages:-Burns without smoke, leaves no residue, Cheaper as compared to fossil fuels.)
30. Write the name of the substance whose vapours are used to run the turbine of the generator of ocean thermal energy plant. (CBSE 2013)
    (Ans:- Ammonia)

EXEMPLAR QUESTIONS

31. What is a good source of energy?
32. If you could use any source of energy for heating your food, which one would you use and why?
33. Give the names of two energy sources that you would consider to be exhaustible. Give reasons for your choices
34. Why are we looking at alternate sources of energy?
35. How has the traditional use of wind and water energy been modified for our convenience?

PREPARED BY :- Mrs. VIPINA GANGADHARAN

CHECKED BY: HOD - SCIENCE