

Time : 1 Hour 30 Minute

STD 10 Science
Chapter Based Test

Total Marks : 50

SECTION A

* Select and write one most appropriate option out of the four options given [7]
for each of the questions

1. In a hydro power plant:

- | | | | |
|---|--|--|---|
| (A) Potential energy possessed by stored water is converted into electricity. | (B) Kinetic energy possessed by stored water is converted into potential energy. | (C) Electricity is extracted from water. | (D) Water is converted into steam to produce electricity. |
|---|--|--|---|

2. Acid rain happens because:

- | | | | |
|--|---|---|--------------------------------------|
| (A) Sun leads to heating of upper layer of atmosphere. | (B) Burning of fossil fuels release oxides of carbon, nitrogen and sulphur in the atmosphere. | (C) Electrical charges are produced due to friction amongst clouds. | (D) Earth atmosphere contains acids. |
|--|---|---|--------------------------------------|

3. If the solar constant is 1.4kW/m^2 then solar energy received by 1m^2 area in one hour is:

- | | | | |
|------------|--------------|-------------|-------------|
| (A) 5040J. | (B) 504.0kJ. | (C) 5040kJ. | (D) 5.04kJ. |
|------------|--------------|-------------|-------------|

4. Coke is more valuable when used:

- | | | | |
|--------------------------------------|---------------------------|-------------------------|---------------------------------|
| (A) As a fuel for industrial boilers | (B) As an oxidising agent | (C) As a reducing agent | (D) As a fuel in domestic ovens |
|--------------------------------------|---------------------------|-------------------------|---------------------------------|

5. The energy produced by converting 1 gram mass of a nuclear fuel into energy completely is:

- | | | | |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| (A) $9 \times 10^{16}\text{J}$. | (B) $9 \times 10^{14}\text{J}$. | (C) $9 \times 10^{15}\text{J}$. | (D) $9 \times 10^{13}\text{J}$. |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|

6. Most of the sources of energy that we use represent stored solar energy. Which of the following is not ultimately derived from the sun's energy?

- Wind energy.
- Geothermal energy.
- Fossil fuels.
- Biomass.

7. A newly planted sapling usually grows and matures into a tree in more than:

- 50 years.
- 25 years.
- 45 years.
- 15 years.

* Assertion - Reasoning based questions.

[3]

8.

In the following questions, a statement of Assertion is given by the corresponding statement of Reason. Of the statements, mark the correct answer as:

- a. If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- b. If both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
- c. If Assertion is true, but Reason is false.
- d. If Assertion is false, but Reason is true.
- e. If Assertion and Reason both are false.

Assertion: Solar cells are used to convert solar energy into electrical energy.

Reason: The radiant heat present in solar energy does not change into electrical energy.

9. In the following questions, a statement of Assertion is given by the corresponding statement of Reason. Of the statements, mark the correct answer as:

- a. If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- b. If both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
- c. If Assertion is true, but Reason is false.
- d. If Assertion is false, but Reason is true.
- e. If Assertion and Reason both are false.

Assertion: The hydrogen bomb is more harmful than nuclear fission.

Reason: Nuclear fusion produce more energy than nuclear fission.

10. In the following questions, a statement of Assertion is given by the corresponding statement of Reason. Of the statements, mark the correct answer as:

- a. If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- b. If both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
- c. If Assertion is true, but Reason is false.
- d. If Assertion is false, but Reason is true.
- e. If Assertion and Reason both are false.

Assertion: Concave mirror is best suited for use in a solar cooker.

Reason: Concave mirror converges large amount of light of the sun into the solar cooker.

* **Fill in the blank with correct answer.[1 Mark each]** [2]

11. Splitting of a heavy nucleus into two lighter nuclei is called _____.

12. Nuclear _____ is used in nuclear power stations for the production of electricity.

* **Answer the questions.[1 Mark each]** [2]

13. What are the raw materials used for making biogas?

14. Flowing water can rotate a turbine. Which type of energy is used up by the turbine?

SECTION B

* **Answer the following question. :** [10]

1.

Give the names of two energy sources that you would consider to be exhaustible. Give reasons for your choices.

2. How has the traditional use of wind energy been modified for our convenience?
3. What is meant by conventional sources of energy? Write the names of two conventional sources of energy.
4. Write anyone way in which a thermal power plant differs from a hydro power plant.
5. Which of the two causes serious air pollution and how?

SECTION C

* **Answer short answer questions. [3 Mark each]** [12]

1. Write two different ways of harnessing energy from ocean.
2. What are the limitations of energy that can be harnessed from the sea?
3. State any four characteristics of a good source of energy.
4. What is a solar cell? Draw the labelled diagram of a solar cell.

SECTION D

* **Long answer questions [5 Mark each]** [10]

1. Make a list of conventional and non-conventional sources of energy. Give a brief description of harnessing one nonconventional source of energy.
2. With the help of a labelled diagram, explain the construction and working of a solar cooker.

SECTION E

* **case - based/data -based questions** [4]

1. Of the major requirement of different forms of energies, write which one is the greater requirement of India and which is the least? What is the percentage of the hydro energy requirement of India?



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