PHYSICS

BOOKS - ZEN PHYSICS (KANNADA ENGLISH)

SOURCES OF ENERGY

Questions Section In Text Question

1. What is a good source of energy?

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2. What is a good fuel?


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3. If you could use any sources of energy for heating your food, which one would you use and why?


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4. What are the disadvantage of fossil fuels?

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5. Why are we looking at alternate source of energy?

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6. How has traditional use of wind and water energy been modified for our convenience?

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7. What kind of mirror- concave, convex, or plain- would be best suited for use in a solar cooker? Why?

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8. What are the limitations of the energy that can be obtained from the oceans?

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9. What is geothermal energy?

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10. What are the advantage of nuclear energy?

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11. Can any energy source be pollution free ? Why or why not?

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12. Hydrogen has been used as a rocket fuel. Would you consider it a cleaner fuel than CNG? Why or why not?

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13. Name two energy sources that you would consider to be renewable. Give reason for your choices.

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14. Give the names of two ener8y sources that you would consider to be exhaustible. Give reasons for your choices.

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15. What is a good source of energy?

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22. What are the limitations of the energy that can be obtained from the oceans?

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23. Define geothermal energy

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24. What are the advantage of nuclear energy?

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25. Can any energy source be pollution free ?

Why or why not?

Watch Video Solution

26. Explain how liquid hydrogen can be used as a fuel

Watch Video Solution

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Questions Section Textual Exercise

1. A solar water heater cannot be used to get hot water on

A. a sunny day

B. a cloudy day

C. a hot day

D. a windy day

Answer:

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2. Which of the following is not an example of a bio-mass energy source?

A. Wood

B. Gobar gas

C. Nuclear energy

D. Coal

Answer:

Watch Video Solution

3. Most of the sources of energy we are represent stored solar energy. Which of the following is not ultimately derived from the sun's energy

A. Geothermal energy

B. wind energy

C. Nuclear energy

D. biomass

Answer:

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4. Compare and contrast fossil fuels and the sun as direct energy sources.

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5. Compare and contrast biomass and hydroelectricity as energy sources.

View Text Solution

6. What are the limitations of extracting energy from :

I) The Wind II) Waves III) tides .

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7. On what basis would you classify energy sources as

(a) renewable and non-renewable?

exhaustible and inexhaustible?

are the options given in (a) and (b) the same ?

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8. What are the qualities of an ideal energy source ?

Watch Video Solution

9. What are the advantages and disadvantages of using a solar cooker? Are there places where solar cookers would have limited utlity?

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10. What are the environmental consequences of the increasing demand for energy? What steps would you suggest to reduce energy consumption?

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Zen Additional Questions Section Multiple Choice Questions

1. Which of the following is a non-renewable energy source?

A. Wind energy

B. Solar energy

C. Fossil fuels

D. Nuclear energy

Answer:

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2. Elements used for solar cell are

A. Silicon

B. Silver

C. Sllicon and silver

D. None of these

Answer: A::C::D

 Watch Video Solution

3. Which of the following is not an example of a bio-mass energy source?

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C. Nuclear energy

D. Coal

Answer: A::C

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4. At typical solar cell can generate electricity of about

A. 14 watt

B. 0.14 watt

C. 0.7 watt

D. 7 watt

Answer: A

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5. Solar cells are commonly used in

A. Artificial satellites

B. TV relay stations

C. Traffic signals

D. All of these

Answer: A::B::C::D

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6. Common forms of ocean energy are

A. wase energy

B. ocean thermal energy

C. tidal energy

D. All of these

Answer: A::B::C::D

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7. The energy which cannot be taken as an indirect source of solar energy is

A. Wind energy

B. energy from flowing water

C. Nuclear energy

D. None of these

Answer: A::C

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8. Minimum wind velocity required for making a windmill function is

A. 15 m/s

B. 15 km/hr

C. 10 km/hr

D. 18 m/s

Answer: A

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9. Solar energy can be used in

A. Solar cooker

B. Photosynthesis

C. Solar cell

D. All of these

Answer: A::B::C::D

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10. Conventional energy sources are

A. Coal

B. Wood

C. Petroleum

D. All of these

Answer: A::B::C::D

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11. The main constituent of biogas is

A. methane

B. ethane

C. butane

D. hydrogen

Answer: A

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12. The main constituent of natural gas is

A. LPG

B. butane

C. isobutene

D. methane

Answer: A

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13. Which one of the following is not an energy source?

A. Levers

B. Muscie power

C. water stored at dams

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Answer:

Watch Video Solution

14. The non-renewable energy source among the following is

A. coal energy

B. nuclear energy

C. wood

D. wind energy

Answer: A::C

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15. In which of the following devicel process is solar energy converted into chemical energy?

A. solar evaporation

B. photosynthesis

C. Solar cells

D. solar heater

Answer:

Watch Video Solution

16. Which one of the following substances is not used for making solar cells

A. silicon

B. elenium

C. iron sulphide

D. admium sulphide

Answer: D

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17. Which of the following energy sources cannot be used as an energy source on a cloudy day?

A. Geothermal energy

B. tidal energy

C. Nuclear energy

D. solar energy

Answer: A

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18. The device which converts solar energy into electrical energy is/are

A. Solar cooker

B. Solar energy

C. solar cell

D. All of these

Answer: A::B::C::D

Watch Video Solution

19. Which part of sunlight used in making a solar cell?

A. Infrared radiation

B. Ultraviolet radiation

C. Visible radiation

D. All of these

Answer: A::B::C::D

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20. In a nuclear reactor, liquid sodium metal is used as

A. fuel

B. coolant

C. moderator

D. None of these

Answer: A::C

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21. The major problem In harnessing nuclear energy is how to

A. split nuclel

B. sustain the reaction

C. spose off spent fuel safely

D. convert nuclear enery into electrical energy

Answer: A::D

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22. A turbine cannot be rotated by

A. flowing water

B. heat of sun

C. steam

D. moving wind

Answer: A

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23. Which of the following is nota form of ocean energy

A. Geothermal energy

B. ocean thermal energy

C. tidal energy

D. Wave energy

Answer: A

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24. Which one of the following is renewable?

A. coal

B. Wood

C. Petroleum

D. Natural gas

Answer: D

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25. Which of the following are characteristics of a good energy source ?

A. Easily stored

B. Easily transported

C. Economica

D. All

Answer: A::B::C::D

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26. The combustible substances formed from the dead remains of the animals and plants which were buried under the surface of eart are called

A. fuel

B. energy sources

C. Fossil fuels

D. All

Answer:

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27. Natural gas contains _____ per cent of methane gas.

A. 96

B. 97

C. 3

D. 93

Answer: C

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28. Which of the following are greenhouse gases?

A. N_2

B. CO_2

C. CH_4

D. both b & c

Answer: B::C

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29. The process useful to convert solar energy into chemical energy is called

A. Electrolysis

B. Respiration

C. Photosynthesis

D. Greenhouse effect

Answer:

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30. The regions in the crust where the hot magma is collected are called

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31. The process where wo lighter nucei fuse together to form a heavier nucleus is called

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32. Which of the following is ecofriendly ?

A. Thermal power plant

B. Hydropower plant

C. Biogas plant

D. Nuclear power station

Answer: A::B

Watch Video Solution

33. The inner surface of solar cooker is coated with black paint to

A. absorb more heat

B. reflect light

C. prevent rusting

D. converge the light rays

Answer: A::B

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34. The power plant in which natural source of energy is directly used to rotate turbines is

A. thermal power plant

B. hydro - electric power plant

C. nuclear power plant.

D. solar power plant.

Answer: A::C::D

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35. Arrange the fuels in the order of Increasing calorific value: LPG, Cowdung cakes, Petrol, Coal, Hydrogen gas.

A. Coal , cowdung cakes, Petrol, LPG , Hydrogen

B. Hydrogen, LPG , Petrol , Coal , Cowdung cake

C. Cowdung cakes, Petrol, Coal , LPG , Hydrogen

D. Cowdung cakes, Coal, Petrol , LPG, Hydrogen

Answer: A::C::D

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36. Which of the following is a non-renewable energy source?

A. Wind energy

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Answer:

Watch Video Solution

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45. Conventional energy sources are

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C. Cowdung cakes, Petrol, Coal , LPG , Hydrogen

D. Cowdung cakes, Coal, Petrol , LPG, Hydrogen

Answer: A::C::D

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Zen Additional Questions Section Very Short Answer Ivsai Type Questions

1. Name the two major components present in the leftover slurry of a biogas plant.

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2. Name the major constituents of biogas and their approxinate percentage content in it.

Watch Video Solution

3. A student constructed a box-type solar cooker and covered it with a glass place. Write the purpose served by the glass plate in the cooker.

Watch Video Solution

4. List any two limitations in harnessing wind energ.

Watch Video Solution

5. List two forms of energy where solar energy manifests itself in ocens.

Watch Video Solution

6. Name two combustible compounds of biogas.

Watch Video Solution

7. Name the device whiech converts sunlight into electricity.

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8. Name the microorganisms which decompose cowdung biogas.

View Text Solution

9. How has the tradicional use of wind energy been modified for our convenience?

View Text Solution

10. What is the minimum speed of wind to run a windmill to maintain the necessary speed of turbine in an electric generator?

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11. How is the increase in demand for energy affecting our environment adversely?

Watch Video Solution

12. List two main advantages of solar cells.

Watch Video Solution

13. Why is CNG considered an environmental friendly fuel?

Watch Video Solution

14. Name the process of large energy production in the sun.

Watch Video Solution

15. What is the value of solar constant on earth?

Watch Video Solution

16. Out of the total solar energy striking the periphery of earth, what fraction reaches its surface?

Watch Video Solution

17. Define ocean thermal energy.

Watch Video Solution

18. What is bagasse?

View Text Solution

19. Name any three forms of energy which could be harnessed from the Oceans.

Watch Video Solution

20. Define geothermal energy

Watch Video Solution

21. Define biomass. Give three examples.

Watch Video Solution

22. Define anaerobic degradations.

View Text Solution

23. What temperaturedifference between the surface water of an Ocean and its deeper

water is necessary for the operation of ocean-thermal-energy conversion plants?

Watch Video Solution

24. Why are black surfaces utilised for making solar cooker and solar water heaters?

Watch Video Solution

25. What is a solar cell?

Watch Video Solution

26. What is the main purpose behind the use of a mirror in a solar cooker ?

Watch Video Solution

27. Name any two materials used for making solar cells.

Watch Video Solution

28. State one advantage of harnessing energy from the sea [or oceans].

Watch Video Solution

29. Name the two devices that work using heat energy of the sun.

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Watch Video Solution

Zen Additional Questions Section Short Answer Sa Type I Questions

1. Describe the steps Involved in obtaining biogas and explain what is meant by anaerobic decomposition.

View Text Solution

2. Which isotope of uranium can undergo fission readily?

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3. State one limitation of solar energy available from solar cells.

Watch Video Solution

4. What is the minimum wind velocity required to obtain useful energy with a windmill?

Watch Video Solution

5. Define nuclear fission.

Watch Video Solution

6. Name the three forms in which energy from an ocean is made available for use. What are OTEC power plants?

Watch Video Solution

7. How do OTEC power plants operate?

View Text Solution

8. What is biomass? Give the composition of a biogas plant.

View Text Solution

9. Explain the process of energy generation in the sun and name the scientist who was the first to propose it.

Watch Video Solution

10. List the main consttuents of a nuclear reactor and give their functions.

Watch Video Solution

11. Mention why is it not possible to make use of solar cells to meet all our energy needs. State three reasons to support your answer. Also mention three uses of solar cells.

Watch Video Solution

12. Name the process by which nuclear energy is generated and aslo name one substance used for the same. Give two advantages and two hazards of nuclear energy.

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24. Name the process by which nuclear energy is generated and aslo name one substance used for the same. Give two advantages and two hazards of nuclear energy.

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Zen Additional Questions Section Short Answer Sa Type 2 Questions

1. Explain solar cell panel.

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2. What is the importance of hydropower plants in India ?

Watch Video Solution

3. With the help of a labelled diagram show how the energy of flowing water is converted into electricity.

View Text Solution

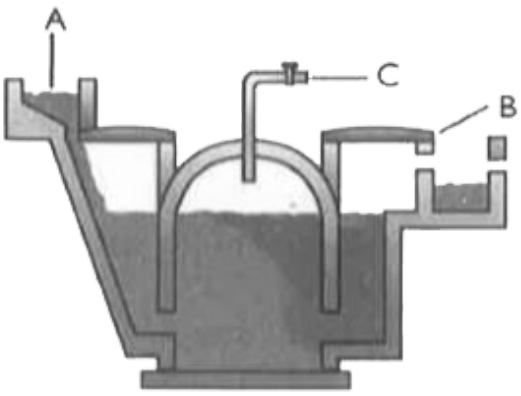
4. Answer the following questions on the basis of the diagram of a biogas plant gven below:

(a) What is biomass? How is biogas obtained from biomass?

(b) Why is biogas considered an ideal fuell ?

"Biogas plant is a boon to farmers." Why?

(c) Name the parts labelled A, B , and C in the diagram.



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5. What is tidal energy?

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6. How is tidal energy harnessed for producing electricity ?

Watch Video Solution

7. State the advantages and disadvantages of using tidal energy.

Watch Video Solution

8. What is nuclear fusion? Explain with the help of an example. Also write the nuclear equation.

Watch Video Solution

9. If the height of falling water is increased, more electrical power can be generated in a hydroelectric power plant. Why?

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10. List any two criteria for selecting a good fuel.

Watch Video Solution

11. Explain how does burning of fossil fuels causes air and soil pollution

Watch Video Solution

12. Write any two advantages of hydroelectric energy.

Watch Video Solution

13. What is meant by nuclear waste ? State the main hazard of this waste on living beings. How is this waste disposed off?

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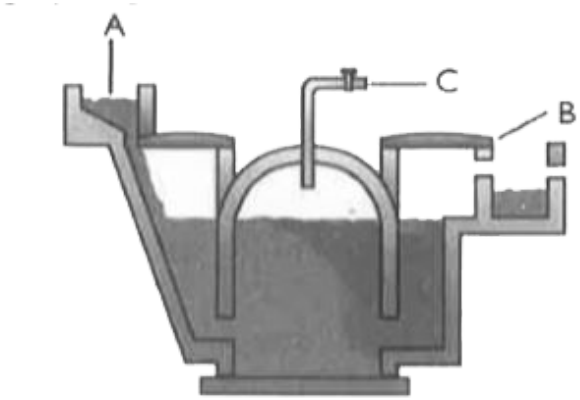

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21. What is nuclear fusion? Explain with the help of an example. Also write the nuclear equation.

Watch Video Solution

22. If the height of falling water is increased, more electrical power can be generated in a hydroelectric power plant. Why?

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23. List any two criteria for selecting a good fuel.

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24. Explain how does burning of fossil fuels causes air and soil pollution

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25. Write any two advantages of hydroelectric energy.

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26. What is meant by nuclear waste ? State the main hazard of this waste on living beings. How is this waste disposed off?

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Zen Additional Questions Section Long Answer La Type Questions

1. Which is the process used to harness nuclear energy these days? Explain it briefly.

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2. How can solar energy be harnessed? Mention any two limitations in using solar energy. How are these limitations overcome ?

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3. Make a list of comventional and non-conventional energy sources. Give a brief description of harnessing one non - conventional energy source.

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4. Why is there a need for harnessing non-comventional energy sources How can energy be harnessed from the sea in different ways ?

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5. What are the environmental consequences of using fossil fuels? Suggest the steps to minimze the pollution caused by various energy sources, including non-conventional sources of energy.

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6. Energy from various sources is considered to have been derived from the sun. Do you

agree? Justify your answer.

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7. What is biomass? Explain the principle and working of a biogas plant using a labelled schematic diagram.

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8. Which is the process used to harness nuclear energy these days? Explain it briefly.

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9. How can solar energy be harnessed? Mention any two limitations in using solar energy. How are these limitations overcome ?

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10. Make a list of comventional and non-conventional energy sources. Give a brief

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11. Why is there a need for harnessing non-comventional energy sources How can energy be harnessed from the sea in different ways ?

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12. What are the environmental consequences of using fossil fuels? Suggest the steps to minimze the pollution caused by various energy sources, including non-conventional sources of energy.

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13. Energy from various sources is considered to have been derived from the sun. Do you agree? Justify your answer.

Watch Video Solution

14. What is biomass? Explain the principle and working of a biogas plant using a labelled schematic diagram.

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Zen Additional Questions Section Higher Order Thinking Skills Hots

1. State the areas where acid rains are most likely.

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2. Energy can neither be created nor destroyed. Then why is there so much noise about energy crisis ?

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3. When a body falls freely to the ground, its velocity reduces to zero and the sum of the total kinetic energy and potential energy also becomes zero. Does it violate the law of conservation of energy?

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4. Why does a car parked in sunlight remain hot from inside even when there is no sunlight ?

Watch Video Solution

5. Biogas contains 70% methane. The calorific value of methane is 55 kJ/kg. If a family requires 10,000 kJ of energy per day, how much biogas is needed per day?

Watch Video Solution

6. What are semiconductors' Explain the principle of working of solar cells made of

semiconductor. Why are solar panel cells used in artificial satellites?

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7. What is criticality of a nuclear reaction? How is it achieved?

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