ASSIGNMENT QUESTIONS FOR PRACTICE
SOURCES OF ENERGY

VERY SHORT ANSWER TYPE QUESTIONS (1 MARK)

1. Define energy.

2. What is good source of energy?

3. What is good fuel?

4. Name the physical quantity associated with the capacity to perform work.

5. Write the two forms of mechanical energy.

6. Define kinetic energy of a body.

7. Define potential energy of a body.

8. Write the formula for kinetic and potential energies.

9. What is the common name for radiant energy?

10. State four different forms of energy?

11. Do kinetic energy and potential energy have the same units?

12. Which form of energy is associated with the deflating of a balloon?

13. Name a source of radiant energy.

14. Name the natural and man made sources of radiant energy.

15. What is the chemical energy? Is it a form of potential energy?

16. What do you mean by a muscular energy?

17. Name the form of energy that gives us warmth.

18. What type of energy that gives us while climbing a staircase?

19. A torch cell converts one form of energy into another form. Name these two forms of energy.

20. Which form of energy is stored in a compressed spring?

21. Give an example where potential energy is acquired by a body due to a change in its shape.

22. Why do you feel exhausted after doing laborious work?

23. Name the form of energy that man has been using over the ages. How does he get this energy?

24. What is wind? Does it possess energy?

25. What is the source of energy in the sun?

26. Does wind possess kinetic or potential energy?

27. What is a windmill?

28. Mention two uses of windmills.

29. Can we produce electricity by using a cluster of windmills?

30. What kind of energy transformation takes place when wind moves a sailboat?

31. Name one place in India where a wind energy power station has been established.

32. Does moving water possess energy?

33. What is a turbine?

34. What is hydro-electricity generation?

35. What is a water wheel?

36. Name the device that converts mechanical energy in the turbine into electrical energy.

37. What is a dam?

38. What kind of energy is possessed by water stored in dams?

39. Name the device that converts the kinetic energy of flowing water into mechanical energy.

40. In a water wheel, which form of energy is transformed into work?

41. What is the name given to moving air?

42. Why are the inner walls and bottom of the box-type solar cookers painted black?

43. What is the use of glass sheet cover in solar heating device?

44. What is the use of a reflector in the solar heating device?

45. Name the two types of commonly used reflectors in a solar heating device.

46. What is the maximum temperature attainable in case of box type solar cooker?

47. Can we use the box type solar cooker for a quick heating?

48. Out of box-type and spherical reflector type solar cookers, which (i) produces a higher temperature (ii) produces slow heating?

49. What is meant by a solar furnace?

50. What is the order of temperature that can be attained by a solar furnace?

51. Name the device which converts solar energy directly into electricity.

52. When was first practical solar cell made?

53. Which material is used for connecting the solar cells in a solar panel?

54. Name the type of semiconductor used in a modern solar cell.

55. What do you mean by a solar cell panel?

56. State two uses of solar cells.

57. Name the type of cell used for operating electronic watches and calculators.

58. Does wind energy produce environmental pollution?

59. What do wind-energy maps indicate?

60. Name any two wind-energy regions of India.

61. What is the first step in utilizing wind energy on a commercial scale?

62. What do you mean by hydro energy?

63. What is geothermal energy?

64. Is hydro energy a direct or an indirect source of energy?

65. Is water energy a non-renewable source of electric energy?

66. Name the property of water which enables the oceans to act as a storehouse of solar heat energy.

67. Which kind of mirror-concave, convex or plane – would be best suited for use in a solar cooker? Why?

68. What is the full form of OTE?

69. What do you mean by ocean thermal energy?

70. What do you mean by tidal energy?

71. Give one important way of trapping heat inside the solar cooker?

72. Name the most important green house gas in the earth's atmosphere.

73. What should be the temperature difference between surface water and water at depth in an ocean, to tap ocean thermal energy?

74. A students constructed a model of box-type solar cooker. He used a transparent plastic sheet to cover the open face of the box. He found that this cooker does not function well. What modification should he make to enhance its efficiency? Give reason?

75. Can we use a box-type solar cooker for baking and frying?

76. What are the substances used for producing heat known as?

77. Name three important sources of modern fuels.

78. What are propellants?

79. What is the value of solar constant?

80. Name two gaseous fuels.

81. What are processed fuels? Give one example.

82. What is biomass?

83. Name the ultimate source of fossil fuel.

84. What is the composition of coal?

85. Name the places in India where coal is mainly found.

86. Name the coal which has a high carbon content.

87. Why are sources of energy required inspite of law of conservation of energy?

88. Name two acidic oxides released on burning fossil fuels.

89. What is LPG?

90. What is the composition of petroleum gas? Give one of its uses.

91. Why is ethyl hydrogen sulphide added in the LPG cylinders?

92. Give two uses of natural gas.

93. Name two gas pipelines in India which have been installed to supply natural gas to the industries and homes.

94. Name the acidic oxide released by burning fossil fuel which causes green house effect.

95. Which gas is released by anaerobic decomposition of submerged vegetation in dams?

96. Define calorific value of fuel.

97. "The calorific value of cooking gas (LPG) is 50kJ/g". What does it mean?

98. Define ignition temperature of a fuel.

99. What do you understand by nuclear wastes?

100. Out of alpha, beta and gamma radiations, name the radiations that are most dangerous for human beings?

101. What is the name given to a slow moving neutron?

102. Which type of bomb was used in the second world war in 1945?

103. In case of an atom bomb, is it controlled or uncontrolled chain reaction which takes placed during explosion?

104. Name any two non-conventional sources of energy.

105. What are renewable sources of energy?

106. What are non-renewable sources of energy?

107. What is the chemical name of marsh gas?

108. Name the device in which nuclear fusion reaction is controlled and maintained.

109. What is a controlled chain reaction?

110. Which isotope of uranium is used in nuclear fission in nuclear reators?

111. What is nuclear reactor?

112. Name the fuel used in atomic reactors.

113. What is the importance of cadmium rods in nuclear reactor?

114. What is meant by the critically of a reaction?

115. Name the process that forms the principle of a nuclear (i) atom bomb (ii) hydrogen bomb.

116. Which of the two processes is carried out at a higher temperature: nuclear fission or nuclear fusion?

117. Name the main constituent of biogas?

118. What do you understand by dry distillation of wood?

119. What are fossil fuels?

120. Why are fossil fuels called 'depletable' sources of energy?

121. Describe in brief how petroleum is formed inside the earth.

122. Explain why the fuels containing oxygen have a low calorific value?

123. A tremendous amount of energy is released during a nuclear fission reaction. Why?

124. What would happen if all the hydrogen present in the sun is converted into helium?

125. It is said that the energy produced from nuclear fusion would create fewer pollution problems than the energy produced by nuclear fission. Explain. Why?

SHORT ANSWER TYPE – I QUESTIONS (2 MARKS)

1. What are primary and secondary fuels? Give two examples of each.

2. Why is charcoal considered a better fuel than wood?

3. Coal is said to be formed from the wood of trees. Why then coal considered to be a non-renewable source of energy whereas wood is renewable source of energy?

4. Name all the products obtained by the fractional distillation of petroleum.

5. What is LPG? Give one advantage and one disadvantage of LPG.

6. Why is LPG considered a good fuel?

7. Why is LPG considered a better fuel than coal?

8. Define calorific value of a fuel. Which has a high calorific value: wood or charcoal?

9. Explain why a match stick can light a splinter of wood but not a log of wood?

10. Explain why one can boil water in a paper cup without burning it?

11. What do you mean by transformation of energy? Give some examples.

12. What do you mean by conservation of energy? Briefly explain the statement.

13. How can energy crisis be averted?

14. Write four functions performed by the sun's energy.

15. Give two applications of nuclear fission.

16. What constitutes nuclear reactions? How is the problem of disposal of nuclear waste being tackled at present?

17. State two differences between nuclear reactions and chemical reactions.

18. Mention four uses of wind energy.

19. Write two limitations of wind energy.

20. Write two advantages of wind energy.

21. What is the difference between a thermal power plant and a hydro power plant?

22. Give two advantages of liquid and gaseous fuels over solid fuels.

23. Give two advantages of smokeless chulhas over traditional chulhas.

24. Give four examples of renewable sources of energy.

25. Give four examples of non-renewable sources of energy.

SHORT ANSWER TYPE – II QUESTIONS (3 MARKS)

1. Define combustion. What are the various conditions required for combustion to take place?

2. What are the various characteristics of an ideal fuel?

3. Give examples to explain the transformation of potential energy into kinetic energy and vice versa.

4. Mention any three harmful effects of nuclear radiation on our body.

5. What is solar constant? What is the value of solar constant? If the energy received by 5m2 area in 10 minutes is 4200kJ, calculate the value o\f solar constant.

6. What is a solar cell? Draw the labeled diagram of a solar cell.

7. What is biogas? Name the major component of biogas.

8. What is the origin of biomass energy? Briefly explain it.

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

10. State two difference between nuclear fission and nuclear fusion. Also give examples. How is the sun able to liberate such a large amount of energy without getting cooled?

LONG ANSWER TYPE QUESTIONS (5 MARKS)

1. What is hydroelectric power? Draw a schematic diagram of a hydroelectric power plant.

2. What is geothermal energy? What is the source of heat contained in geothermal energy? Explain how geothermal energy is sued to generate electricity. State two advantage and disadvantages of geothermal energy.

3. What is biogas? Describe the construction and working of a biogas plant with the help of a labeled diagram. Write any two uses of biogas.

4. What is solar energy? What are the various devices based on solar energy? Briefly describe the construction and working of a solar cooker.

5. What are solar cells? How are they designed? Does solar energy cause any environmental pollution? State important uses of solar cells.

6. Which property of water in oceans enables it to act a storehouse of solar energy? Name some important forms of energy which could be harnessed from the oceans. What is meant by OTE? Name three important potential sites in India which have been identified harnessing tidal energy.

7. Give the principle, construction and operation of a Box type solar cooker.

8. States three advantages and three limitations of a box type solar cooker. What are the main differences between box-type solar cooker and spherical reflector type solar cooker?

9. What is solar energy? How do form a solar panel cell? What are the uses of solar cells?

10. What is a nuclear reactor? What is the fuel used in a nuclear reactor? With the help of a labeled diagram, describe the working of a nuclear power plant.