

I. Choose the best answer.

(10× 1 = 10)

- Conduction is the heat transfer which takes place in a _____.
a) Solid b) Liquid c) Gas d) All of them
- Heat is a form of _____ energy.
a) Electrical b) Gravitational c) Thermal d) None of these
- The process of converting a liquid into a solid is called _____.
a) Sublimation b) Condensation c) Freezing d) Deposition
- Which of the following substance will absorb more heat energy?
a) Solid b) Liquid c) Gas d) All the above
- _____ is the only matter on the earth that can be found naturally in all three states.
a) Metal b) Water c) Electricity d) Temperature
- Which of the following is true about Oxygen?
a) Complete burning gas b) Partially burning gas
c) Does not support burning d) Supports burning
- Which of the following is known as azote?
a) Oxygen b) Nitrogen c) Sulphur d) Carbondioxide
- Aerated water contains _____.
a) Air b) Oxygen c) Carbondioxide d) Nitrogen
- Carbondioxide with water changes _____.
a) Blue litmus to red b) Red litmus to blue
c) Blue litmus to yellow d) Does not react with litmus
- _____ irritates eyes and skin of humanbeings.
a) Carbondioxide b) Oxygen c) Nitrogen d) Acid rain

II. Fill in the blanks.

(7× 1 = 7)

- A calorimeter is a device used to measure the _____.
- The process of converting a substance from gas to solid is called _____.
- If the temperature of a liquid in a container is decreased, then the inter atomic distance will _____.

14. _____ is used as a refrigerant.

15. _____ is called as vital life.

16. The process of conversion of Iron into hydrated form of oxide is called as _____

17. _____ radiation is absorbed by the surface of land and ocean.

III. True or False.

(7× 1 = 7)

- Convection is the process by which the thermal energy flows in solids.
- The process of converting a substance from solid to gas is called condensation.
- The applied heat energy can be realized as an increase in the average kinetic energy of the molecules.
- Oxygen is a poor conductor of heat and electricity.
- An average increase in the temperature of the atmosphere is global warming.
- The amount of heat gained by a substance is equal to the product of its mass and latent heat.
- In a thermosflask, the silvered walls reflect and radiate the heat to the outside.

IV. Match the following.

(7× 1 = 7)

- | | |
|-------------------|---------------------|
| 25. Radiation | - Solid |
| 26. Convection | - Gas to liquid |
| 27. Nitrogen | - Solid to gas |
| 28. Carbondioxide | - Gas |
| 29. Sublimation | - Liquid |
| 30. Conduction | - Fertilizer |
| 31. Condensation | - Fire extinguisher |

V. Reason and Assertion. (2 × 1 = 2)

32. Assertion : Radiation is a form of heat transfer which takes place even in vacuum.

Reason : The thermal energy is transferred from one part of a substance to another part without the actual movement of the atoms or molecules.

- a) Both assertion and reason are true and the reason is the correct explanation of the assertion.
- b) Both assertion and reason are true, but reason is not the correct explanation of the assertion.
- c) The assertion is true, but the reason is false.
- d) The assertion is false, but the reason is true.

33. Assertion : A system can be converted from one state to another state.

Reason : It takes place when the temperature of the system is constant.

- a) Both assertion and reason are true and the reason is the correct explanation of the assertion.
- b) Both assertion and reason are true and the reason is not the correct explanation of the assertion.
- c) The assertion is true, but the reason is false
- d) The assertion is false, but the reason is true.

VI. Short answers. (Any 10) (10 × 2½ = 25)

(Question No. 40 is compulsory)

- 34. Name three types of heat transfer?
- 35. What is Conduction?
- 36. Define one calorie.
- 37. Write a note on Convection
- 38. What are the effects of heat?
- 39. What are the applications of conduction in our daily life. (Any 2 points)
- 40. (i) Metals expand during _____ (Winter/ Summer/ Rainy)
ii) In hot air balloons _____ is transferred by convection and so the balloon raises.

41. What are the sources of Oxygen?

42. List out the uses of Nitrogen.

43. Mention the physical properties of oxygen.

44. What is global warming?

45. Write about the reaction of Nitrogen with Non-Metals

46. What is dry ice? What are its uses.

47. Write few preventive measures for global warming.

VII. Answer in detail. (Any 3) (3 × 5 = 15)

48. With the help of a neat diagram explain the working of a calorimeter.

49. What happens when Carbon dioxide is passed through lime water?

Write the equation for this reaction.

50. Write a note on thermostat.

51. Name the compounds produced when the following substances burn in Oxygen.

- a) Carbon
- b) Sulphur
- c) Phosphorous
- d) Magnesium
- e) Iron
- f) Sodium

52. Explain the working of thermoflask.

53. What are the effects of Acid rain? How can we prevent them?

VIII. Solve 'any one' of the following numerical problems. (1 × 2 = 2)

- 54. The energy required to raise the temperature of an Iron ball by 1K is 500J/K^{-1} Calculate the amount of energy required to raise its temperature by 20K.
- 55. The temperature of a metal ball is 30°C. When an energy of 3000J is supplied its temperature raises by 40°C. Calculate its heat capacity.