Arjuna NEET (2024)

Thermodynamics

DPP-03

1. ΔE is always positive when
(1) System absorbs heat and work is done on it
(2) System emits heat and work is done on it
(3) System emits heat and no work is done on it
(4) System absorbs heat and work is done by it

2. Out of the following the correct statement is:
(1) w is a state function
(2) $\Delta E = q + w$ for every thermodynamic system at rest in the absence of external field
(3) $q = 0$ for every cyclic process
(4) $\Delta E = 0$ for every cyclic process

3. In an isothermal expansion of an ideal gas
(1) $q = 0$ (2) $\Delta V = 0$
(3) $\Delta U = 0$ (4) $w = 0$

4. In a constant volume process, internal energy change is equal to
(1) Heat transferred (2) Work done
(3) Zero (4) None of the mentioned

5. Which of the following is zero for an isochoric process?
(1) dP (2) dV
(3) dT (4) dE

6. In an isochoric process the increase in internal energy is
(1) Equal to the heat absorbed
(2) Equal to the heat evolved
(3) Equal to the work done
(4) Equal to the sum of the heat absorbed and work done

7. The process, in which no heat enters or leaves the system, is termed as
(1) Isochoric (2) Isobaric
(3) Isothermal (4) Adiabatic

8. Which of the following is true for an adiabatic process?
(1) $\Delta H = 0$ (2) $\Delta W = 0$
(3) $\Delta Q = 0$ (4) $\Delta V = 0$

9. The first law of thermodynamics is only
(1) The law of conservation of energy
(2) The law of conservation of mass
(3) The law of conservation of momentum
(4) Both (1) and (2)

10. The internal energy of a substance
(1) Increases with increase in temperature
(2) Decreases with increase in temperature
(3) Remains constant
(4) Calculated by $E = mc^2$

11. The process carried out in perfect insulation is
(1) Isothermal (2) Isobaric
(3) Isochoric (4) Adiabatic

12. During adiabatic expansion of ideal gas, which is correct?
(1) Temperature increases
(2) $q = 0$
(3) Temperature remain constant
(4) $\Delta E = 0$

13. For isothermal expansion of ideal gas which is correct?
(1) $\Delta H = 0$ (2) $\Delta E = 0$
(3) $\Delta T = 0$ (4) All

14. As per the First Law of thermodynamics, which of the following statement would be appropriate:
(1) Energy of the system remains constant
(2) Energy of the surroundings remains constant
(3) Entropy of the universe remains constant
(4) Energy of the universe remains constant

15. For a particular process q = –10 kJ and w = 25 kJ. Which of the following statements is true?

(1) Heat flows from the surroundings to the system

(2) The system does work on the surroundings

(3) $\Delta E = -35kJ$

(4) None of the above is true

16. A system absorbs 10 kJ of heat and does 4 kJ of work. The internal energy of the system

(1) Increases by 6 kJ

(2) Decreases by 6 kJ

(3) Decreases by 14 kJ

(4) Increases by 14 kJ

17. In an adiabatic expansion of an ideal gas

(1) $\Delta T = 0$ (2) $w = 0$

(3) $q = 0$ (4) $\Delta U = 0$

18. One mole of an ideal gas at 25°C expands in volume from 1.0 L to 4.0 L at constant temperature. What work (in J) is done if the gas expands against vacuum ($P_{external} = 0$)?

(1) -4.0×10^2 (2) -3.0×10^2

(3) -1.0×10^2 (4) Zero

19. Isothermal free expansion of an ideal gas correspond to

(1) $q = 0$ (2) $w = 0$

(3) None of these (4) Both (1) and (2)

Note: Kindly find the Video Solution of DPPs Questions in the DPPs Section.

Answer Key

1.	**(1)**	**11.**	**(4)**
2.	**(4)**	**12.**	**(2)**
3.	**(3)**	**13.**	**(4)**
4.	**(1)**	**14.**	**(4)**
5.	**(2)**	**15.**	**(4)**
6.	**(1)**	**16.**	**(1)**
7.	**(4)**	**17.**	**(3)**
8.	**(3)**	**18.**	**(4)**
9.	**(1)**	**19.**	**(4)**
10.	**(1)**		

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