DPP-1 [Basic Defination]

When you feel like you're going to break, remember why you started.

Q1. Thermodynamics is concerned with:

(1) Total energy of a system
(2) Energy changes in a system
(3) Rate of a chemical change
(4) Mass changes in nuclear reactions

Q2. A well-stoppered thermos flask contains some ice cubes. This is an example of:

(1) Closed system
(2) Open system
(3) Isolated system
(4) Non-thermodynamic system

Q3. Identify the intensive quantity from the following:

(1) Enthalpy and temperature
(2) Volume and temperature
(3) Enthalpy and volume
(4) Temperature and refractive index

Q4. Which of the following is an extensive property?

(1) Mass
(2) Enthalpy
(3) Energy
(4) All of these

Q5. For an adiabatic process which of the following relations is correct:

(1) $\Delta E = 0$
(2) $P\Delta V = 0$
(3) $q = 0$
(4) $q = +w$

Q6. Temperature and volume are not:

(1) Extensive properties
(2) Intensive properties
(3) Intensive and extensive properties respectively
(4) Extensive and intensive properties respectively

Q7. Both q & w are _____ function:

(1) State
(2) State, Path
(3) Path, State

(4) Path

Q8. Intensive property is:

(1) Moles
(2) Volume
(3) Enthalpy
(4) Temperature

Q9. Which of the following is not a state function:

(1) Pressure
(2) Volume
(3) Temperature
(4) Heat

Q10. Which of the following is not a thermodynamic function?

(1) Internal energy
(2) Work done
(3) Enthalpy
(4) Entropy

Q11. Which thermodynamic parameter does *not* depend only on initial and final state?

(1) q at constant pressure
(2) q at constant volume
(3) w at adiabatic
(4) w at isothermal

Q12. For an isolated system:

(1) $q = 0$ and $w = 0$
(2) $q \neq 0$ and $w = 0$
(3) $q = 0$ and $w \neq 0$
(4) $q \neq 0$ and $w \neq 0$

Q13. Which of the following pair is an example of extensive property?

(1) P and T
(2) C and E
(3) E and V
(4) T and V

Q14. The correct set of intensive properties:

(1) P, T
(2) V, T
(3) P, V
(4) V, E

Q15. Among the following, which is not a state function?

(1) Volume
(2) Temperature
(3) Pressure
(4) Heat

Q16. **Select the pair of intensive properties** [NCERT Pg. 168]:

(1) Volume, entropy

(2) Refractive index, density

(3) Temperature, enthalpy

(4) Enthalpy, Gibbs free energy

Q17. **Tea placed in a thermoflask is an example of:**

(1) Open system

(2) Closed system

(3) Isolated system

(4) It can't act as system

Q18. **The respective examples of extensive and intensive properties are:**

(1) Enthalpy, entropy

(2) Entropy, enthalpy

(3) Enthalpy, temperature

(4) Temperature, entropy

Q19. **Identify the intensive quantity from the following:**

(1) Enthalpy

(2) Temperature

(3) Volume

(4) Heat capacity

Q20. **Zeroth law of thermodynamics states that:**

(1) Heat is path function

(2) Energy is conserved

(3) Heat transfer takes place till thermal equilibrium is achieved

(4) Entropy is conserved

Q21. **A system X undergoes the following changes:**

$X(P_1, V_1, T_1) \rightarrow W(P_2, V_2, T_1) \rightarrow Z(P_3, V_2, T_2) \rightarrow X(P_1, V_1, T_1)$.

The overall process may be called as:

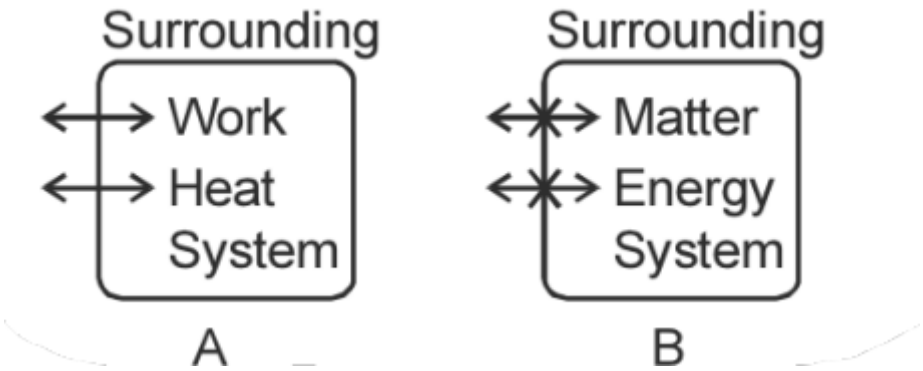
(1) Reversible process

(2) Cyclic process

(3) Cyclic reversible process

(4) Isochoric process

Q22. **Different types of systems are shown below (A and B). The A and B systems respectively are:**



(1) Open system, Closed system
(2) Isolated system, Closed system
(3) Adiabatic system, Isolated system
(4) Closed system, Isolated system

Q23. Set of intensive properties is shown by:

(1) Mole fraction, standard electrode potential, heat capacity
(2) Viscosity, refractive index, specific heat
(3) Density, Gibbs free energy, internal energy
(4) Number of moles, molarity, electrode potential

Q24. Which of the following is an example of open system?

(1) Human body
(2) The earth
(3) Pond
(4) All of these

Q25. Which of the following is not a state function?

(1) H
(2) U
(3) q
(4) G

Q26. Which of the following is an intensive property?

(1) Temperature
(2) Heat
(3) Mass
(4) Volume

Q27. Closed system can exchange (with surroundings):

(1) Heat
(2) Matter
(3) Heat and matter
(4) Neither heat nor matter

Q28. System and surroundings together constitute:

(1) The earth
(2) The solar system
(3) Galaxy
(4) Universe

Q29. Which of the following is an intensive property?

(1) Enthalpy
(2) Entropy
(3) Specific heat
(4) Volume

Q30. Which one is dependent only on initial and final state?

(1) Heat supplied at constant pressure
(2) Heat supplied at constant volume
(3) Enthalpy
(4) All of the above

Q31. Out of boiling point (I), entropy (II), pH (III) and emf of a cell (IV), intensive properties are:

(1) I, III, IV
(2) I, II
(3) I, II, III
(4) All of these

Q32. Which of the following are *not* state functions?

(I) $q + w$ (II) q (III) w (IV) $H - TS$

(1) (I) and (II)
(2) (I) and (III)
(3) (II) and (III)
(4) (II), (III) and (IV)

Q33. Which thermodynamic parameter does *not* depend only on initial and final state?

(1) q at constant pressure
(2) q at constant volume
(3) w at adiabatic
(4) w at isothermal

Q34. Consider the statements:
(a) q and w are state functions
(b) $q + w$ is a state function
(c) ΔG is a state function.
The correct statement(s) is/are:

(1) (a) only
(2) (a) & (b) only
(3) (b) & (c) only
(4) All of these

Q35. Consider the statements:
(a) q is state function in isochoric process
(b) w is state function in isobaric process
(c) Work done by the system will be zero in adiabatic free expansion.
Correct among the following is/are:

(1) (a) only
(2) (b) only
(3) (b) & (c)
(4) (a), (b) & (c)