

11. Mathematical form of first law of thermodynamics is

A. $\Delta H = qp$

B. $\Delta E = q + W$

C. $\Delta E = q \times v$

D. all of the above

Answer: Option B

12. Reaction in which heat evolves is called

A. endothermic

B. spontaneous

C. non-spontaneous

D. exothermic

Answer: Option D

13. $\text{CuSO}_4 + \text{Zn} \rightarrow \text{ZnSO}_4 + \text{Cu}$ is

A. Spontaneous reaction

B. Non-spontaneous reaction

C. Endothermic

D. Exothermic

Answer: Option A

14. Pumping of water uphill is

A. spontaneous process

B. non-spontaneous process

C. irreversible process

D. reversible process

Answer: Option B

15. State function the macroscopic property of system depends upon

A. path of reaction

B. initial state

C. final state

D. initial and final state

Answer: Option D

16. Which one of the following is a state function?

