D. $[M^0L^1T^{-1}]$

19. Van der Waal's equation of state is: $\left(\mathrm{P}+\frac{a}{V^2}\right)(V-b)=RT$ where P is pressure, V is volume, T is temperature and R is universal gas constant. Find the dimensions of Vander Waal's constants a and b. What is the dimension of b:

A. $[M^0L^2T^{-1}]$

B. $[M^0L^3T^0]$

C. $[M^1L^2T^0]$

D. $[M^1L^2T^{-1}]$

20. The force F is given in terms of time (t) and the displacement (x) by the equation: $F = AcosBx + CsinDt$. The dimension of $\frac{D}{B}$ is:

A. $[M^0L^1T^1]$

B. $[M^0L^1T^{-1}]$

C. $[M^0L^{-1}T^1]$

D. $[M^0L^0T^0]$

21. The percentage error in measurement of mass and speed are 2% and speed are 3% respectively. What will be the error in the measurement of kinetic energy?

A. 2%

B. 6%

C. 8%

D. 18%

22. The error in measurement of radius of the sphere is 2%, then what will be the possible error in measurement of volume?

A. 2%

B. 4%

C. 6%

D. 8%

23. If the change in KE is 4%, then momentum changes by:

A. 1%

B. 2%

C. 6%

D. 8%