1.If the degree of freedom of a gas are f, then the ratio of two specific heats vpCC/ is given by
[MP PMT 1990; MP PET 1995; BHU 1997; MP PMT 2001]

(a) $\frac{2}{f}+1$ (b) $1-\frac{2}{f}$

(c) $1+\frac{1}{f}$ (d) $1-\frac{1}{f}$

2.The value of C_V.for one mole of neon gas is

(a) $\frac{1}{2}R$ (b) $\frac{3}{2}R$ **[MP PMT 2000]**

(c) $\frac{5}{2}R$ (d) $\frac{7}{2}R$

3.The specific heat of a gas at constant pressure is greater than that of the same gas at constant volume because [UPSEAT 2000]

(a)At constant pressure work is done in expanding the gas against constant external pressure

(b)At constant volume work is done when pressure increases

(c)The molecular agitation increases at constant pressure

(d)The molecular agitation decreases at constant volume

4.The specific heat of 1 mole of an ideal gas at constant pressure (C_p) and (C_V) at constant volume which is correct [UPSEAT 2000]

(a) C_p of hydrogen gas is $\frac{5}{2}R$

(b) C_V of hydrogen gas is $\frac{7}{2}R$

(c) H_2 has very small values of C_p and C_V

(d) $C_p-C_V=1.99\,cal/mole-K$ for H_2

5.In gases of diatomic molecules, the ratio of the two specific heats of gases is [EAMCET (Med) 1995]

(a)1.66 (b)1.40

(c)1.33 (d)1.00

6.When an ideal monoatomic gas is heated at constant pressure, the fraction of heat energy supplied which increases the internal energy of the gas is [AIIMS 1995]

(a) $\frac{2}{5}$ (b) $\frac{3}{5}$

(c) $\frac{3}{7}$ (d) $\frac{3}{4}$

7.If R is gas constant and C_p and C_V are specific heats for a solid per mole, then for the solids

(a) $C_p-C_V=R$ (b) $C_p-C_V<<R$ **[CPMT 1977]**

(c) $C_p-C_V=0$ (d) C_p-C_V **is negative**

8.When two moles of oxygen is heated from 0°C to 10°C at constant volume, its internal energy changes by 420 J. What is the molar specific heat of oxygen at constant volume

(a) $5.75\ J\text{-}K^{-1}mol^{-1}$ (b) $10.5\ J\text{-}K^{-1}mol^{-1}$

(c) $21\ J\text{-}K^{-1}mol^{-1}$ (d) $42\ J\text{-}K^{-1}mol^{-1}$

9.If U represents the internal energy of one mole of a gas and T is the absolute temperature, then the molar specific heat of the gas at constant pressure is

(a) $\frac{dU}{dT}$ (b) $\frac{dU}{dT}+R$

(c) $\frac{dU}{dT}-R$ (d) $R-\frac{dU}{dT}$

10.The ratio of specific heat of a gas at constant pressure to that at constant volume is . The change in internal energy of a mass of gas when the volume changes from V to 2V at constant pressure P is

(a) $\frac{R}{\gamma-1}$ (b) PV

(c) $\frac{PV}{\gamma-1}$ (d) $\frac{\gamma PV}{\gamma-1}$

Answer

01.	02.	03.	04.	05.	06.	07.	08.	09.	10.
a	b	a	d	b	b	b	c	b	c