

### Sample questions Physics

S. No	Questions	Answer	Marks	Chapter
1.	A carnot engine working between 300K has a work output of 800J per cycle. The amount of heat energy supplied to the engine in each cycle is a) 800J b) 1600J c) 3200J d) 6400J	B	1	
2.	For hydrogen gas $C_p - C_v = a$ and for oxygen gas $C_p - C_v = b$ . The relation between $a$ and $b$ is a) $a = 16b$ b) $a = b/16$ c) $a = 4b$ d) $a = b$	D	1	
3.	The equation of state corresponding to 8 g of $O_2$ is (assume $O_2$ to be an ideal gas) a) $PV = 8RT$ b) $PV = RT/4$ c) $PV = RT$ d) $PV = RT/2$	B	1	
4.	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 a) $2/5$ b) $3/5$ c) $3/7$ d) $3/4$	B	1	
5.	At zero Kelvin, which of the following properties of a gas will be zero? a) Kinetic energy b) Potential energy c) Mass d) Density	A	1	
6.	By exerting a certain amount of pressure on an ice block, you a) Lower its melting point b) Make it melt at $0^{\circ}C$ only c) Make it melt at a faster rate d) Raise its melting point	A	1	
7.	If 110J of heat is supplied to a gaseous system, its internal energy changes by 40J. The amount of external work done is a) 150J b) 70J c) 110J d) 40J	B	1	
8.	A body cools from $50.0^{\circ}C$ to $49.9^{\circ}C$ in 5s. How long will it take to cool from $40.0^{\circ}C$ to $39.9^{\circ}C$ ? Assume the temperature of the surroundings to be $30.0^{\circ}C$ and Newton's law of cooling to be valid. a) 2.5s b) 10s c) 20s d) 5s	B	1	

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9.	<p>The critical temperature of CO<sub>2</sub> is 31.1<sup>0</sup>C and the room temperature is 40<sup>0</sup>c, then CO<sub>2</sub> behaves as a</p> <p>a) Gas  b) Vapour  c) Gas and vapour  d) Liquid</p>	A	1	
10.	<p>One mole of a monoatomic gas is mixed with one mole of a diatomic gas. What will be the value of <math>\gamma</math> for the mixture?</p> <p>(a) 1.5  (b) 1.54  (c) 1.4  (d) 1.45</p>	A	1	