

## PPSC Physics Topic 3 Thermal Properties of Matter

Sr	Questions	Answers Choice
1	Gases exert pressure on walls of the vessels because gas molecules.	A. Possess momentum B. Have finite volume C. Collide with each other D. Obey gas laws
2	Let at constant temperature the pressure of an ideal gas be doubled so that the new volume is.	A. Doubled the original volume B. Same as original volume C. Reduced to half the original volume D. Reduced to two times the original volume
3	Which of the following is a clinical thermometer.	A. Gas thermometer B. Mercury thermometer C. Alcohol thermometer D. Radiation thermometer
4	The efficiency of a diesel engine is about	A. 15% to 35% B. 35% to 40% C. 45% to 65% D. 50% to 65%
5	When the temperature of source and sink of a heat engine become equal the entropy change will be.	A. Zero B. Maximum C. Minimum D. Negative
6	An ice making machine extracts energy at the rate of 500 W. The specific latent heat of fusion of ice is 300 kJ kg <sup>-1</sup> . How long does it take to freeze 2 kg of water at 0°C.	A. 120 s B. 150 s C. 1200 s D. 1500 s
7	What happens to internal energy of a piece of lead when hammered.	A. Increases B. Decreases C. Remains unchanged D. Becomes zero
8	Which quantity must be the same for two bodies if they are to be in thermal equilibrium.	A. Internal energy B. P.E C. Temperature D. Mass
9	The practical efficiency of a heat engine is	A. 25% to 30.5% B. 35% to 45% C. 30% to 45% D. 15% to 25%
10	An immersion heater rated at 150 W is fitted into a large block of ice at 0°C. The specific latent heat of fusion is 300 J g <sup>-1</sup> . How long does it take to melt 10 g of ice.	A. 5 s B. 10 s C. 15 s D. 20 s
11	Which of the following is the ideal gas equation.	A. $PV = nRT$ B. $P/V = nRT$ C. $V/P = nRT$ D. $PV = T/nR$
12	When heat is supplied to a metallic sphere which one of the following changes will occur.	A. the mass of the sphere increases B. The volume of the sphere increases C. The density of the sphere increases D. The internal energy of the sphere increases
13	A gas thermometer is more sensitive than a mercury thermometer because the expansion of gas for 1°C rise in temperature is.	A. Five times as much as mercury B. Ten times as much as mercury C. Twenty times as much as mercury D. Hundred times as much as mercury
14	The heat accepted and rejected by a Carnot engine operating between two heat reservoirs	A. The efficiency of the working substance of the engine B. the ideal gas scale of temperature

defines.

- C. The ratio of the absolute temperature of the reservoirs
- D. The thermal capacity of the working substance

What is the necessary condition for Boyle's law to hold good.

- A. Isothermal
- B. Adiabatic
- C. Isobaric
- D. Isochoric

When a solid is melting the temperature remains constant even through heat is being supplied because the

- A. Heat is being used to break up the intermolecular bonds
- B. Solid is not absorbing any heat
- C. Molecules are moving faster
- D. Molecules are farther a part

A mercury in glass thermometer and thermocouple thermometer are both calibrated using the same fixed point of 0 oC and 100 oC when both temperature are used to measure the temperature of a body the temperature measured on both thermometers will be exactly the same

- A. For all temperatures between 0 oC and 100 oC only
- B. Only are the fixed points
- C. For all temperatures at all times
- D. When converted to the Kelvin scale

The ideal thermal efficiency of a cyclic heat engine is limited by

- A. Friction in the engine
- B. Amount of heat in the engine
- C. Difference between input temperature and output temperature.
- D. Amount of work

How many calories of heat are required to evaporate completely 1 g of ice at 0 oC

- A. 480 calories
- B. 720 calories
- C. 940 calories
- D. 1170 calories

The gas thermometer is taken as the primary standard because.

- A. Thermometers are easily reproducible
- B. Readings can be accurately taken
- C. No correction are necessary
- D. It produces the thermodynamic scale