

PPSC Physics Topic 3 Thermal Properties of Matter

| Sr | Questions | Answers Choice |
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| 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 ⁻¹ . 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 ⁻¹ . 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. $V/P = nR/T$ 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 |

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| 14 | defines. | <p>C. The ratio of the absolute temperature of the reservoirs</p> <p>D. The thermal capacity of the working substance</p> |
| 15 | What is the necessary condition for Boyle's law to hold good. | <p>A. Isothermal</p> <p>B. Adiabatic</p> <p>C. Isobaric</p> <p>D. Isochoric</p> |
| 16 | When a solid is melting the temperature remains constant even though heat is being supplied because the | <p>A. Heat is being used to break up the intermolecular bonds</p> <p>B. Solid is not absorbing any heat</p> <p>C. Molecules are moving faster</p> <p>D. Molecules are farther apart</p> |
| 17 | A mercury in glass thermometer and thermocouple thermometer are both calibrated using the same fixed point of 0 °C and 100 °C when both thermometers are used to measure the temperature of a body the temperature measured on both thermometers will be exactly the same | <p>A. For all temperatures between 0 °C and 100 °C only</p> <p>B. Only at the fixed points</p> <p>C. For all temperatures at all times</p> <p>D. When converted to the Kelvin scale</p> |
| 18 | The ideal thermal efficiency of a cyclic heat engine is limited by | <p>A. Friction in the engine</p> <p>B. Amount of heat in the engine</p> <p>C. Difference between input temperature and output temperature.</p> <p>D. Amount of work</p> |
| 19 | How many calories of heat are required to evaporate completely 1 g of ice at 0 °C | <p>A. 480 calories</p> <p>B. 720 calories</p> <p>C. 940 calories</p> <p>D. 1170 calories</p> |
| 20 | The gas thermometer is taken as the primary standard because. | <p>A. Thermometers are easily reproducible</p> <p>B. Readings can be accurately taken</p> <p>C. No correction are necessary</p> <p>D. It produces the thermodynamic scale</p> |