

Answer the Following MCQs

- 1- The pressure of gas in term of its main kinetic energy E per unit volume is equal to :
A) $E/3$ B) $E/2$ C) $3E/4$ D) $2E/3$
- 2- A tank used for filling helium balloons has a volume of 0.300 m^3 and contains 2.00 mol of helium gas at 20.0°C . Assume the helium behaves like an ideal gas. The total translational kinetic energy of the gas molecules will be
A) 0.730 J B) $7.30 \times 10^3 \text{ J}$ C) 730 J D) $730 \times 10^3 \text{ J}$
- 3- A pan of water is heated from 25°C to 80°C . The change in its temperature on Kelvin scale and on the Fahrenheit scale will be
A) 55 K and 30°F B) 99 K and 55°F C) 55 K and 55°F D) 55 K and 99°F
- 4- The fractional change in the volume of earth's oceans due to an average temperature change of 1°C (β for water = $2.07 \times 10^{-4} \text{ }^\circ\text{C}^{-1}$) will be :
A) 4×10^{-4} B) 4×10^{-2} C) 2×10^{-4} D) 2×10^{-1}
- 5- According to the kinetic theory of gases, all molecules in the gas are
A) identical B) dissimilar C) heterogeneous D) homogenous
- 6- What is the value of coefficient of volume expansion of an ideal gas
A) $(\Delta V/V)/\Delta T$ B) $2 \times \text{coefficient of linear expansion}$
C) $(V/\Delta V)/\Delta T$ D) $1/3 \times \text{coefficient of linear expansion}$
- 7- Three bodies are having temperature $T_A = -42^\circ\text{F}$, $T_B = -10^\circ\text{C}$, $T_C = 2000 \text{ K}$. Which body among these is most warm?
A) T_A B) T_B C) T_C D) None of these
- 8- Some iron has a coefficient of linear expansion of $12 \times 10^{-6} \text{ K}^{-1}$. A 100 mm length of iron piping is heated through 20 K . The pipe extends by:
A) 0.24 mm B) 0.024 mm C) 0.0024 mm D) 2.4 mm
- 9- A man fires a silver bullet of mass 2 g with a velocity of 200 m/sec into a wall. What is the temperature change of the bullet? (where c for silver is $234 \text{ J/kg} \cdot ^\circ\text{C}$)
A) 85.5°C B) 0.085°C C) 0.427°C D) 42.7°C
- 10- If we put some water in a pot and put it over the bunsen burner, the thermal energy supplied to the water would lead to a gain in
A) external energy B) internal energy C) chemical energy D) physical energy

Summer Mid Term Exam

Name

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- 1- Which of the following is not a form of heat transfer?
A) radiation ~~B) convection~~ C) sublimation D) conduction
- 2- Temperature of core of earth is equal to 3727 °C. This temperature in Kelvin is equal to
~~A) 4000 K~~ B) 3727 K C) 3454 K D) None of the above
- 3- The pressure of a gas 750 torr when its volume is 400 ml, the pressure (in atm) if the gas is allowed to expand to 600 ml at constant temperature.
~~A) 0.660 atm~~ B) 1.48 atm C) 500 atm D) 1125 atm
- 4- A perfect black body has emissivity
~~A) e=1~~ B) e=0 C) e=2 D) e=4
- 5- The energy (in calories) absorbed by 20 grams of water ($c=1.00 \text{ cal/g.}^\circ\text{C}$) that warms from 30°C to 90°C is:
A) 1020 cal. B) 1002 cal. C) 2100 cal. ~~D) 1200 cal.~~
- 6- Raising the temperature of 1Kg of water by 1°C requires
A) 41.86 J B) 4186 J C) 418.6 J D) 4.186 J
- 7-When the temperature of a rod of copper is increased, its length:
A) stays the same B) increases C) decreases D) increases then decreases
- 8-Avogadro stated that equal volume of gases under the same conditions of temperature and pressure have equal
A) number of molecules B) number of grams C) molar masses D) speeds
- 9-The change in the state of matter from gas to liquid is termed as
A) boiling ~~B) condensation~~ C) evaporation D) solidification
- 10-A student heats up 4 kg sulphuric acid from 5 °C to 55 °C with the thermal energy of 20000 J. the specific heat capacity of the sulfuric acid is
A) 25 J kg⁻¹ °C⁻¹ B) 50 J kg⁻¹ °C⁻¹ C) 70 J kg⁻¹ °C⁻¹ ~~D) 100 J kg⁻¹ °C⁻¹~~
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