

ECAT Pre General Science Online Test

| Sr | Questions | Answers Choice |
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| 1 | Internal energy is the sum of all the forms of | A. K.E B. P.E C. both of them D. none of them |
| 2 | The volume of given mass of a gas will be doubled at atmosphere pressure if the temperature of the gas is changed from 150°C to | A. 300 °C B. 573 °C C. 600 °C D. 743 °C |
| 3 | The absolute temperature for an ideal gas is | A. directly proportional to the rotational K.E of gas molecules B. directly proportional to the vibrational K.E of gas molecules C. directly proportional to the average translational K.E of gas molecules D. directly proportional to the P.E. of gas molecules |
| 4 | The Boltzman constant has the value | A. $1.38 \times 10^{-23} \text{ JK}^{-1}$ B. $1.28 \times 10^{-23} \text{ JK}^{-1}$ C. $1.38 \times 10^{-26} \text{ JK}^{-1}$ D. $1.28 \times 10^{-26} \text{ JK}^{-1}$ |
| 5 | The ideal gas law is | A. $P = nRT$ B. $V = nRT$ C. $PV = RT$ D. $PV = nRT$ |
| 6 | The pressure exerted by the gas is | A. directly proportional to the P.E B. inversely proportional to the P.E C. inversely proportional to the K.E D. directly proportional to the K.E |
| 7 | While deriving the equation for pressure of a gas we consider the | A. rotational motion of molecules B. vibrational motion of molecules C. linear motion of molecules D. all of them |
| 8 | The pressure of gas everywhere inside the vessel will be the same provided the gas is of | A. Non-uniform density B. uniform density C. high density D. low density |
| 9 | If N is the total number of molecules and V is the volume of the container, then the expression for the pressure of gas is | A. $P = \frac{1}{3} \frac{Nm \overline{v^2}}{V}$ B. $P = \frac{2}{3} \frac{Nm \overline{v^2}}{V}$ C. $P = \frac{2}{3} \frac{N \overline{mv^2}}{V}$ D. $P = \frac{2}{3} \frac{N \overline{mv^2}}{V}$ |
| 10 | Which of the following is not an assumption of kinetic energy | A. a finite volume of gas consists of very large number of molecules B. the gas molecules are in random motion C. collision between the gas molecules are inelastic D. the size of the gas molecules is much smaller than the separation between molecules |
| 11 | The behaviour of gases is well accounted by the kinetic theory based on | A. microscopic approach B. macroscopic approach C. both of them D. none of them |

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| | | D. none of them |
| 12 | A semi-conductor in its extremely pure form is known as | A. extrinsic semi-conductor B. intrinsic semi-conductor C. either of them D. none of them |
| 13 | The materials in which there are plenty of free electrons for electrical conduction are known as | A. conductors B. insulators C. semi-conductors D. all of them |
| 14 | The materials in which valence electrons are bound very tightly to their atoms and are not free, are known as | A. conductors B. insulators C. semi-conductors D. all of them |
| 15 | The bands below the valence band are | A. completely filled and play active part in conduction process B. completely filled and plays no part in conduction process C. completely filled and play active part in conduction process D. not completely filled and play no part in conduction process |
| 16 | The conduction band in a solid | A. may be empty B. cannot be empty C. should be filled D. all of them |
| 17 | The electrons occupying the conduction band are known as | A. conduction electrons B. free electrons C. both of them D. none of them |
| 18 | The band above the valence band is called | A. high energy band B. conduction band C. empty band D. none of them |
| 19 | The valence band of an atom in a solid | A. is always empty B. may or may not be empty C. can never be empty D. none of them |
| 20 | The electrons in the outermost shell of an atom are called | A. core electrons B. valence electrons C. high energy electrons D. none of them |
| 21 | When a large number of atoms are brought close to one another to form a solid, each energy level of an isolated atom splits into sub-levels, called | A. energy bands B. energy shells C. states D. all of them |
| 22 | Electrons of an isolated atom are bound to the nucleus, and | A. can only have distinct energy level B. can only have same energy level C. may or may not have distinct energy levels D. none of these |
| 23 | Which of the following theory completely explain the three types of materials | A. Bohr model of electron distribution B. Rutherford atomic model C. Pauli's exclusion principle D. energy band theory |
| 24 | Lead, copper and wrought iron are examples of | A. brittle substances B. ductile substances C. plastic substances D. elastic substances |
| 25 | Glass and high carbon steel are the examples of | A. brittle substances B. ductile substances C. plastic substances D. elastic substances |
| 26 | The substances which break just after the elastic limit is reached, are known as | A. brittle substances B. ductile substances C. plastic substances D. elastic substances |
| 27 | Substances which break just after the elastic limit is reached, are known as | A. brittle substances B. ductile substances C. plastic substances D. elastic substances |
| | | A. plastic point B. elastic limit |

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| 28 | The maximum stress that a material can withstand, is known as | B. elastic limit C. yield point D. ultimate tensile strength |
| 29 | when the deformation produced in the material become permanent, this type of behaviour is called | A. proportionality B. elasticity C. plasticity D. none of them |
| 30 | If the stress increased beyond the elastic limit of the material. the deformation produced in the material will be | A. permanent B. temporary C. either of them D. none of them |