**Reg. NO:**

**TIME: 45 MIN**

**DATE: 4.5.2020**

**STATES OF MATTER-KEY- HINTSAND SOLUTIONS**

**SUBJECT: CHEMISTRY**

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| **-:** states of matter **-HINTS AND SOLUTIONS :-** |

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| : states of matter - ANSWER KEY | | | | | | | |
| 1) | **a** | **2)** | **a** | **3)** | **c** | **4)** | **b** |
| 5) | **b** | **6)** | **d** | **7)** | **a** | **8)** | **b** |
| 9) | **a** | **10)** | **b** | **11)** | **c** | **12)** | **d** |
| 13) | **b** | **14)** | **a** | **15)** | **c** | **16)** | **a** |
| 17) | **a** | **18)** | **c** | **19)** | **b** | **20)** | **c** |
| 21) | **b** | **22)** | **c** | **23)** | **d** | **24)** | **a** |
| 25) | **B** | **26)** | **c** | **27)** | **c** | **28)** | **d** |
| 29) | **d** | **30)** | **d** |  |  |  |  |

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| --- | --- |
| 1. | **(a)**  rms speed of a gaseous molecule is m/s at a pressure atm.  We know that in kinetic theory of gas  rms speed  We know,  then rms speed  As temperature is constant so, is constant. Hence, rms speed is also constant. If the pressure is doubled at constant temperature, there is no change in rms speed. |
| 2. | **(a)**  Mole given out |
| 3. | **(c)**  Follow Avogadro’s hypothesis. |
| 4. | **(b)** |
| 5. | **(b)** |
| 6. | **(d)**  At constant temperature, for ideal gas,  For the given sample,  The gas behaves non-ideally. However the gas neither undergodimerisation nor adsorbed into the vessel walls. |
| 7. | **(a)**  Hence, the rms velocity doubles when the temperature is increased four times |
| 8. | **(b)** |
| 9. | **(a)**  When equal volumes of and are mixed, the volume of mixture does not changed after the reaction |
| 10. | **(b)** |
| 11. | **(c)**  Ideal gas do not show change in temperature during expansion. |
| 12. | **(d)**  The viral equation for gaseous state is at Boyle’s temperature, gas shows ideal gas behaviour, which is possible only when and |
| 13. | **(b)** |
| 14. | **(a)**  . |
| 15. | **(c)**  shows Rest all shows . |
| 16. | **(a)**  Maximum deviations are noticed at low and high |
| 17.  18. | **(a)**  Effect of temperature on viscosity is given by **hole theory**  **(c)**  CONCEPTUVAL. |
| 19. | **(b)** |
| 20. | **(c)**  This is Avogadro’s hypothesis. |
| 21.  22 . | **(b)**  From Charles’ law  **(c)**  CONCEPTUVAL. |
| 23. | **(d)**  Temperature is doubled in and not on Kelvin scale. |
| 24 | **(a)**  Ideal gas equation is  When and are same,  Thus, when number of moles, is least, it will exert least pressure.  Thus, 0.0335 g chlorine will exert the least pressure. |
| 25. | **(b)**  According to Graham’s law of diffusion  The rate of diffusion of ammonia is more than the , thus white ring forms near the hydrogen chloride bottle |
| 26. | **(c)**  . This is endothermic process, taking place with increase in pressure. If pressure is increased, equilibrium is displaced in backward side (Le-Chatelier) hence, steam is liquefied. To boil the liquid again, boiling point increases |
| 27. | **(c)** |
| 28. | **(d)**  As the temperature rises, the kinetic energy of the molecules increases. Due to which the molecules can leave the liquid surface easily. In other words the vapour pressure increases. However, surface tension and viscosity decrease with rise in temperature. Molality is the ratio of moles of solute to weight of solvent, hence it does not depend upon the temperature. |
| 29. | **(d)**  SATP means 1 bar and . |
| 30. | **(d)**  Follow law of corresponding state, proposed by van der Waals’. |