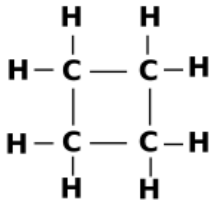
MODEL EXAMINATION: 2024

CHEMISTRY

Max. Score:40 **Time: 1½ hrs**

1. 3f **1**
2. sodium **1**
3. Liquor amonia **1**
4. Carboxylic acid **1**
5. At constant temperature,volume of a definite mass of a gas is inversely proportional to its pressure. **1**
6. a. The real volume of gas molecules is very less when compared to the total volume of the gas. **2**
   c.The gas molecules are in random motion in all direction.
7. a. Ammonium chloride. **2**
   b.$NH_3 + HCl \rightarrow NH_4Cl$
8. a. chloro ethane **2**
   b.methoxy ethane
9. a.Zymase 2
   b.rectified spirit
10. a. distillation. 2
    b. low boiling point.
11. a.Charle's law **3**
    b. Inflated balloon kept on sun light expands.
    c. 3 L
12. a.i. Silver deposits on the copper rod. **3**
    ii. The colourless liquid becomes bluish coloured.
    b. $2AgNO_3 + Cu \rightarrow 2Ag + Cu(NO_3)_2$
    $AgNO_3$ solution is a colourless liquid. It is changed to bluish coloured copper nitrate.
13. a.X: 13^{th} group **3**
    Y: 17^{th} group
    b.1
    c.XY_3
14. a.i. By the addition reaction with hydrogen. 3
    $CH_2 = CH_2 + H_2 \rightarrow CH_3 - CH_3$
    ii. When this product undergoes displacement reaction with chlorine, $CH_3 - CH_2Cl$ is formed.
    $CH_3 - CH_3 + Cl_2 \rightarrow CH_3 - CH_2Cl + HCl$
    b. polymerisation reaction.
15. a.alkene 3
    b.C_4H_8: But – 1 – ene.
    c.



16. a.contact process **4**
    b.Vanadium pentoxide
    c.i.more SO_3 is produced.
    ii.more SO_3 is produced.
17. a.A: Calcium carbonate, B: Calcium oxide **4**
    b. $CaO + SiO_2 \rightarrow CaSiO_3$
    c.Carbon monoxide

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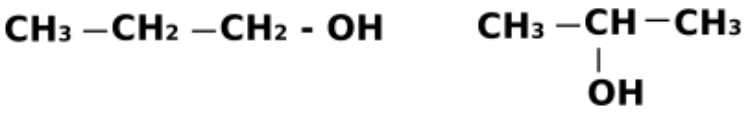
18. a.MCl_2:Oxidation state : +2 **4**
MCl_3:Oxidation state : +3
b. $1s^2$ $2s^2$ $2p^6$ $3s^2$ $3p^6$ $3d^6$ $4s^2$
c.M^{2+}: $1s^2$ $2s^2$ $2p^6$ $3s^2$ $3p^6$ $3d^6$
d. i. Show variable oxidation state. ii. Forms coloured compounds.

19. a. **4**



b. $CH_3 – CH_2 – O – CH_3$: methoxy ethane

20. a. Beaker.A **4**
b. $Zn + CuSO_4 \rightarrow Cu + ZnSO_4$
c. The given materials are arranged as shown. Here the Zn rod acts as anode and Cu rod as cathode. The electron flow will be from Zn to Cu through external circuit.