

|    | <b><u>MODEL EXAMINATION, FEBRUARY -2017</u></b><br><b>CHEMISTRY</b><br>(English Medium) <b>Answer Key</b>                                                                                                                                |                     |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Q  | Scoring Indicators                                                                                                                                                                                                                       | Score               |
| 1  | 3f , 1p                                                                                                                                                                                                                                  | 1                   |
| 2  | a. 13      b. Group -13   Period - 3    c. $X_2O_3$                                                                                                                                                                                      | 1 1 1               |
| 3  | <b>(A)</b> a. 36g    b. 112 L ( Or ) <b>(B)</b> a. 40 g    b. 134.4 L                                                                                                                                                                    | 1 2 1               |
| 4  | M = n/V in Litres<br>A. (14g/56g) / 0.5 L = 0.5 moles / Litre<br>B. (18g/40g) / 0.6 L = 0.75 moles / Litre<br>C. (18g/40g) / 0.75 L = 0.6 moles / Litre<br><b>A &lt; C &lt; B</b>                                                        | 2                   |
| 5  | a. Fe<br><br>b. Positive catalyst – Increases the rate of a reaction Eg $MnO_2$ in the decomposition of $H_2O_2$<br>Negative catalyst – Decreases the rate of a reaction Eg . Phosphoric acid $H_3PO_4$ in the decomposition of $H_2O_2$ | 1<br><br>2          |
| 6  | ii) Increase in pressure favours the forward reaction<br>iv) Removal of $NO_2$ favours the backward reaction                                                                                                                             | 1<br>1              |
| 7  | No , Iron is more reactive than Copper . Hence it will displace copper from the solution                                                                                                                                                 | 2                   |
| 8  | a. At the Cathode – Copper<br>At the anode – Chlorine<br>b. <u>At the cathode</u><br>$Cu^{2+} + 2e \rightarrow Cu_{(s)}$<br><u>At the anode</u><br>$2Cl^- - 2e \rightarrow Cl_2$<br>c. Positive                                          | 1<br><br>2<br><br>1 |
| 9. | a. Elements or their compounds , occurring naturally and obtained by mining are called minerals. Ore is the mineral from which a metal is extracted economically, easily and quickly.<br>b. Sulphide ores eg. Copper pyrites.            | 1<br><br>2          |
| 10 | Haematite / Magnetite                                                                                                                                                                                                                    | 1                   |
| 11 | a. To dissolve Aluminium oxide in NaOH forming Sodium aluminate ( $NaAlO_2$ )<br>b. To reduce the melting point and to increase the electrical conductivity.                                                                             | 1<br>1              |
| 12 | a. $CH_3-CH_2-CH_2-COOH$<br>$CH_3-CH-COOH$<br> <br>$CH_3$<br>b. Butanoic Acid , 2- Methyl propanoic acid                                                                                                                                 | 2<br><br><br>2      |

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|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 13 | <p>a.</p> $  \begin{array}{ccccccc}  & & \text{CH}_3 & & \text{CH}_3 & & \\  & &   & &   & & \\  \text{CH}_3 & - & \text{CH}_2 & - & \text{C} & - & \text{CH}_2 & - & \text{C} & - & \text{CH}_2 & - & \text{CH}_2 & - & \text{CH}_3 \\  & &   & &   & & \\  & & \text{CH}_3 & & \text{CH}_3 & &   \end{array}  $ <p>b .</p> $  \begin{array}{ccccccc}  & & & & \text{CH}_3 & & \\  & & & &   & & \\  \text{CH}_3 & - & \text{CH}_2 & - & \text{CH}_2 & - & \text{CH} & - & \text{C} \equiv \text{C} & - & \text{CH}_3  \end{array}  $ | <p>1</p> <p>1</p> |
| 14 | <p>a. Vinyl Chloride (Chloroethene)</p> <p>b. <math>\text{[ -CH}_2\text{ -CH - ]}_n</math></p> $  \begin{array}{c}    \\  \text{Cl}  \end{array}  $                                                                                                                                                                                                                                                                                                                                                                                    | <p>1</p> <p>1</p> |
| 15 | <p>a. Methyl alcohol and Propanoic acid or any other suitable combinations</p> <p>b. <math>\text{CH}_3\text{OH} + \text{CH}_3\text{-CH}_2\text{-COOH} \rightarrow \text{CH}_3\text{-COO-CH}_2\text{-CH}_3 + \text{H}_2\text{O}</math> (Or any suitable alternative)</p>                                                                                                                                                                                                                                                                | <p>1</p> <p>2</p> |
| 16 | <p>(i) - (d)</p> <p>(ii) - (a)</p> <p>(iii) - (b)</p> <p>(iv) - (c)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <p>2</p>          |
| 17 | <p>Flint Glass/ Optical Glass/ Lead glass</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <p>1</p>          |
|    | <p>-----</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                   |
|    | <p>Prepared by Unmesh B ,HSA Govt VHSS Kallara Thiruvananthapuram .</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |