

Sl. No.

**SSLC EXAMINATION, MARCH - 2022****CHEMISTRY**

(English)

Time : 1½ Hours

Total Score : 40

**General instructions to Candidates :**

- There is a 'cool-off time' of 15 minutes in addition to the writing time. Use this time to get familiar with questions and to plan your answers.
- Questions with different scores are given as distinct parts.
- Read the instructions carefully before answering the questions.
- Keep in mind, the score and time while answering the questions.
- The maximum score for questions from 1 to 24 will be 40.

<b>PART - I</b>		<b>Score</b>
<b>Questions from 1 to 9 carries 1 score each.</b>		
<b>A. Answer any four questions from 1 to 6.</b>		<b>4x1=4</b>
1. Identify the compound which contains a carbon-carbon triple bond. ( $C_5H_{12}$ , $C_2H_2$ , $C_3H_6$ , $CH_4$ )		1
2. Which one of the following subshells has the highest energy ? (1s, 3d, 4s, 3p)		1
3. Find the relation and fill up suitably.		1
(a) Tin stone : Magnetic separation		
(b) Bauxite : _____		
4. Which gas is produced when metals react with dilute hydrochloric acid ?		1
5. 1 GMM of a substance contains _____ number of molecules.		1
6. What happens to the rates of forward and backward reaction at equilibrium point ?		1

P.T.O.

Score  
3x1=3

B. Answer all questions from 7 to 9.

7. Which metal is deposited at cathode, when molten sodium chloride is electrolysed ? 1  
(Sodium, Hydrogen, Chlorine, Calcium)
8. How many electrons are donated by first group elements generally in chemical reactions ? 1  
(1, 2, 3, 4)
9. In which electrode aluminium metal is produced during the electrolysis of Alumina ? 1

### PART - II

Questions from 10 to 12 carry 2 scores each.

A. Answer the following question.

1x2=2

10. (a) Which are the two compounds formed when Ammonium Chloride ( $\text{NH}_4\text{Cl}$ ) is strongly heated ? 1  
(b) Write the chemical equation for this reaction. 1

B. Answer any one question from 11 and 12.

1x2=2

11. Find the mass of 44.8 L of  $\text{NH}_3$  kept at STP 2  
(Hint : Atomic mass N = 14, H = 1)
12. (a) What is electroplating ? 1  
(b) Which is the electrolyte used in electroplating of copper on an iron bangle ? 1

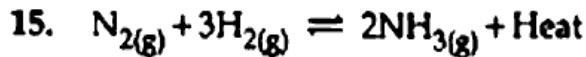
### PART - III

Questions from 13 to 17 carry 3 scores each.

A. Answer any three questions from 13 to 16.

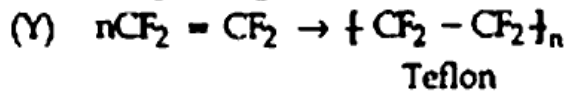
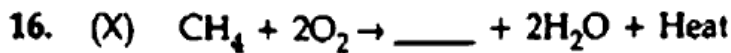
3x3=9

13. (a) Atomic number of an element is 17. Write its subshell electronic configuration. 1  
(b) Find the group number and period number of this element in the periodic table. 2
14. (a) Molten iron obtained from the blast furnace contains 4% carbon and other impurities. What is this known as ? 1  
(b) Which alloy steel is used for making permanent magnets ? 1  
(c) Some alloy steels contain the same component. Then how do they possess different properties ? 1



How do the following changes influence the amount of the product ?

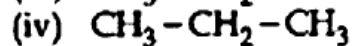
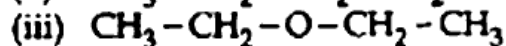
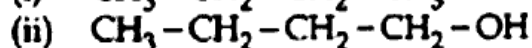
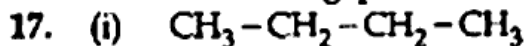
- |   |   |
|---|---|
| (a) Temperature decreases                                     | 1 |
| (b) Pressure increases  | 1 |
| (c) Ammonia produced is removed continuously from the system. | 1 |



- |                                       |   |
|---------------------------------------|---|
| (a) Complete the chemical equation X. | 1 |
| (b) Name the reaction Y.              | 1 |
| (c) Write any one use of Teflon.      | 1 |

B. Answer the following questions.

1x3=3



- |  |   |
|--|---|
| (a) Identify the isomer pair in the given compounds. | 1 |
| (b) Name the isomerism.                              | 1 |
| (c) How many isomers are possible for compound (i) ? | 1 |

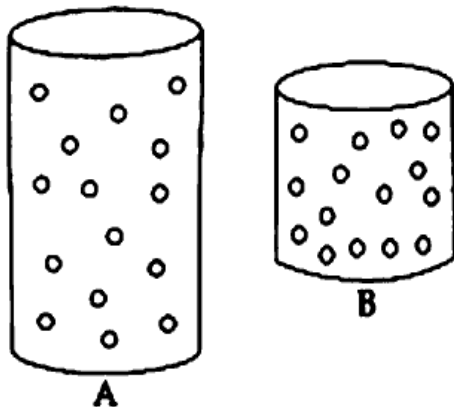
#### PART - IV

Questions from 18 to 22 carry 4 scores each.

A. Answer any two questions from 18 to 20.

2x4=8

18.

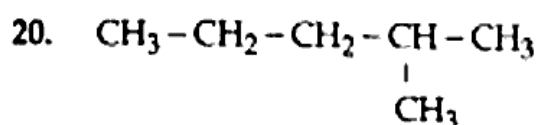


A and B represent two gas cylinders. The gas in the cylinder A is completely transferred to cylinder B, keeping the temperature constant.

- |  |   |
|--|---|
| (a) Compare the gas pressure in cylinder A and cylinder B.   | 1 |
| (b) Which gas law is related to this ?   | 1 |
| (c) 10 L of a gas is kept in a cylinder at 2 atm pressure. Keeping the temperature constant, the gas is completely transferred to a 20 L cylinder. What is the new pressure of the gas ? | 2 |

Score

19. Haematite is converted into iron by reactions taking place in blast furnace.
- (a) Write the molecular formula of Haematite. 1
- (b) Which substance acts as the reducing agent in this process? 1
- (c) Molten iron is produced alongwith slag from the furnace. What is meant by slag? 1
- (d) Write the chemical equation that shows the formation of slag. 1

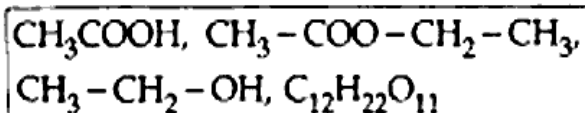


- (a) How many carbon atoms are there in the longest chain of this hydrocarbon? 1
- (b) Give the name of the branch. 1
- (c) What is the position number of the branch? 1
- (d) Write the IUPAC name of the compound. 1

B. Answer any one question from 21 to 22. 1x4=4

21. (a) The industrial preparation of sulphuric acid is known as \_\_\_\_\_. 1
- (b) Which is the catalyst used in this process? 1
- (c) Take some sugar in a watch glass and add a few drops of concentrated sulphuric acid into it. What is your observation? Which chemical property of sulphuric acid is shown here? 2

22. Choose the compounds from the box and answer the following questions.



- (a) Which is a Carboxylic acid? 1
- (b) Which compound is an ester? 1
- (c) Identify ethanol. 1
- (d) Which substance is used in the industrial preparation of ethanol? 1

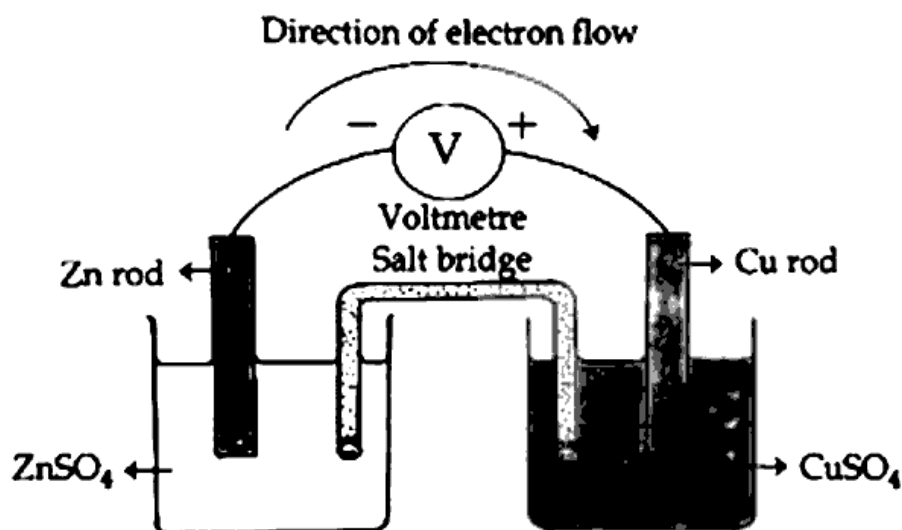
## PART - V

Questions from 23 and 24 carry 5 scores each.

A. Answer any one question from 23 and 24. 1x5=5

23. Atomic number of Manganese (Mn) is 25.
- |   |   |
|---|---|
| (a) Write the subshell electronic configuration of Mn.  | 1 |
| (b) Find the block of Mn in the periodic table.   | 1 |
| (c) Which category of elements does Mn belong ?<br>(Transition element, Halogens, Noble gases, Alkaline earth metals) | 1 |
| (d) What is the oxidation number of Mn in $MnO_2$ ?<br>(Oxidation number of oxygen is -2)                             | 1 |
| (e) Write the subshell electronic configuration of $Mn^{2+}$ .  | 1 |

24. A picture of galvanic cell is given below :



- |  |   |
|--|---|
| (a) What is the energy change taking place in a galvanic cell ?        | 1 |
| (b) Identify the anode in the given cell.                              | 1 |
| (c) Write the chemical equation of the reaction taking place at anode. | 1 |
| (d) In which electrode does oxidation take place ?                     | 1 |
| (e) Write the chemical equation of the redox reaction in the cell.     | 1 |

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