

Tsi11C

Tenkasi District
Common Half Yearly Examination - December 2024



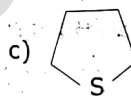
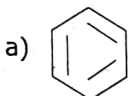
18-12-24
Time Allowed: 3.00 Hours

Standard 11
CHEMISTRY

Maximum Marks: 70

PART - I**15×1=15****Answer all the questions:**

- Splitting of spectral lines in an electric field is called
 - Zeeman effect
 - Shielding effect
 - Compton effect
 - Stark effect
- Ionic hydrides are formed by
 - halogens
 - Chalcogens
 - Inert gases
 - group and elements
- The enthalpies of formation of Al_2O_3 and Cr_2O_3 are -1596 KJ and -1134 KJ respectively. All for the reaction $2\text{Al} + \text{Cr}_2\text{O}_3 \rightarrow 2\text{Cr} + \text{Al}_2\text{O}_3$ is
 - -1365 KJ
 - 2730 KJ
 - -2730 KJ
 - -462 KJ
- Consider the following reversible reaction at equilibrium, $\text{A} + \text{B} \rightleftharpoons \text{C}$, if the concentration of the reactant A and B are doubled, then the equilibrium constant will
 - be doubled
 - become one fourth
 - be halved
 - remain the same
- Which one of the following is non aromatic?



- The given reaction is $\text{CH}_3\text{CH}_2\text{COOAg} + \text{Br}_2 \rightarrow \text{CH}_3\text{CH}_2\text{Br} + \text{CO}_2 + \text{AgBr}$
 - Swarts reaction
 - Darzen's reaction
 - Finkelstein reaction
 - Avosdicker reaction
- Which one of the following represents 180g of water?
 - 5 moles of water
 - 90 moles of water
 - $\frac{6.022 \times 10^{23}}{180}$ molecules of water
 - 6.022×10^{24} molecules of water
- The element with positive electron gain enthalpy is
 - Hydrogen
 - Sodium
 - Argon
 - Fluorine
- Assertion** : Critical temperature of CO_2 is 304K, it can be liquefied above 304K.
Reason : For a give mass of gas, volume is to directly proportional to pressure it constant temperature.

Tsi11C

2

- a) Both assertion and reason are true and reason is the correct explanation of assertion.
- b) Both assertion and reason are true but reason is not the correct explanation of assertion.
- c) Assertion is true but reason is false.
- d) Both assertion and reason are false.
- 10) The IUPAC name of CH_3CHO is
- a) Acetaldehyde
b) Methyl aldehyde
c) Ethanol
d) Ethanal
- 11) Lithium shows diagonal relationship with
- a) Sodium
b) Magnesium
c) Calcium
d) Aluminium
- 12) The relative order of +I effect of alkyl groups is given by
- a) $-\text{C}(\text{OH}_3)_3 < -\text{CH}(\text{CH}_3)_2 < -\text{CH}_2\text{CH}_3 < -\text{CH}_3$
b) $-\text{C}(\text{CH}_3)_3 > -\text{CH}(\text{OH}_3)_2 > -\text{CH}_2\text{CH}_3 > -\text{CH}_3$
c) $-\text{C}(\text{CH}_3)_3 < -\text{CH}(\text{CH}_3)_2 > -\text{CH}_2\text{CH}_3 > -\text{CH}_3$
d) $-\text{C}(\text{CH}_3)_3 > -\text{CH}_3 > -\text{CH}(\text{CH}_3)_2 > -\text{CH}_2\text{CH}_3$
- 13) What is the molality of a 10% w/w aqueous sodium hydroxide solution?
- a) 2.778
b) 10
c) 0.4
d) 2.5
- 14) Which of the following is electron deficient?
- a) PH_3
b) $(\text{CH}_3)_2$
c) BH_3
d) NH_3
- 15) Match the List I with List II and select the correct answer using the code given below the lists:

List I

- A) Depletion of ozone layer
B) Acid rain
C) Photo chemical smog
D) Green house effect

List II

1. CO_2
2. NO
3. SO_2
4. CFC

Code:

- | | A | B | C | D | | A | B | C | D |
|----|---|---|---|---|----|---|---|---|---|
| a) | 3 | 4 | 1 | 2 | b) | 2 | 1 | 4 | 3 |
| c) | 4 | 3 | 2 | 1 | d) | 2 | 4 | 1 | 3 |

PART - II

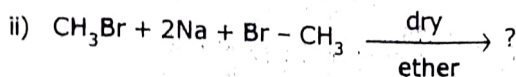
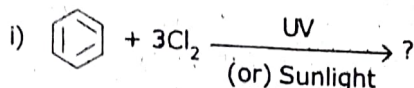
Answer any SIX questions in which question No. 24 is compulsory: $6 \times 2 = 12$

- 16) Define modern periodic law.
- 17) Calculate the gram equivalent mass of H_2SO_4 .
- 18) Mention the uses of plaster of paris.
- 19) What are the conditions for the spontaneity of a process?
- 20) State Le-Chatelier principle.
- 21) What is Osmosis?

Tsl11C

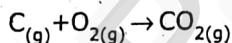
3

- 22) What is homologous series?
 23) What is Eutrophication?
 24) **Complete the following reactions:**

**PART - III**

Answer any SIX questions in which question No. 33 is compulsory. **6×3=18**

- 25) Distinguish between oxidation and reduction.
 26) An atom of an element contains 35 electrons and 45 neutrons. Deduce
 i) the number of protons.
 ii) the electronic configuration for the element.
 iii) All the four quantum numbers for the last electron.
 27) Define electronegativity.
 28) What are Ideal gases? In what way Real gases differ from Ideal gases?
 29) Draw the Lewis structures for the following species.
 (i) NO_3^- (ii) SO_4^{2-} (iii) O_3
 30) Explain inductive effect with suitable example.
 31) Explain the preparation of DDT.
 32) Write a notes on green house effect.
 33) Calculate the standard entropy change for the following reaction (ΔS°_f),
 given the standard entropies of $\text{CO}_{2(g)}$, $\text{C}_{(s)}$, $\text{O}_{2(g)}$ as 213.6, 5.740 and
 205 JK^{-1} respectively.

**PART - IV**

Answer ALL the questions:

5×5=25

- 34) a) i) What is Decomposition reaction? Give example. **(2)**
 ii) Describe the Aufbau principle. **(3)**

(OR)

- b) i) How fast must a 54g tennis ball travel in order to have a de-broglie
 wavelength that is equal to that of a photon of green light 5400Å?
(3)
 ii) What are Iso electronic Ions? Give examples. **(2)**
 35) a) i) Discuss the three types of covalent hydrides. **(2)**
 ii) Discuss the similarities between beryllium and aluminium. **(3)**

(OR)

- b) Derive the values of critical constants in terms of Vander Waals constants. **(5)**

Tsi11C

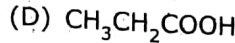
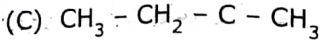
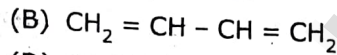
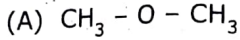
- 36) a) i) Define Hess's law of constant heat summation. (2)
 ii) Derive K_p and K_c for the formation of HI. (3)

(OR)

- b) i) State Raoult law. (2)
 ii) Explain sp^2 hybridisation in BF_3 . (3)
- 37) a) Explain the salient features of Molecular orbital theory. (5)

(OR)

- b) Give the IUPAC name of the following compounds. (5)



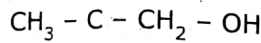
||

O

(E)



|



|



SIVAKUMAR M,
 Sri Ram Matic HSS
 Vallam-627809
 Tenkasi Dist

- 38) a) i) Write short notes on Hyper conjugation. (2)
 ii) Explain the mechanism of SN^1 reaction. (3)

(OR)

- b) i) How does Huckel rule help to decide the aromatic character of a compound? (2)
 ii) On the basis of chemical reactions involved, explain how do CFC's cause depletion of ozone layer in stratosphere? (3)
