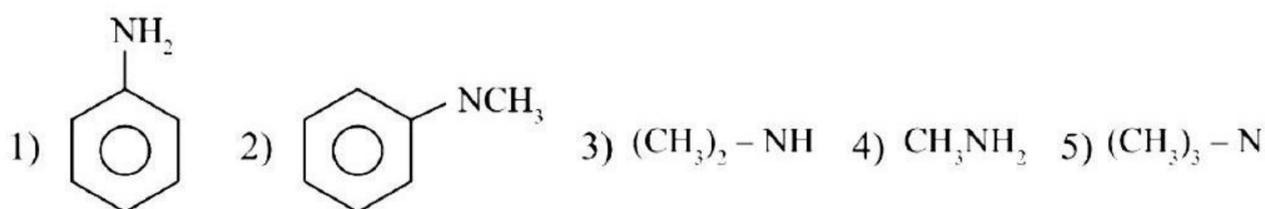


## JEE Main – 07<sup>th</sup> April – 2025 (Shift-1)

### [Memory Based Questions]

#### CHEMISTRY

1. Which of the following gives positive Carbylamine test?



- a) 1 and 2      b) 2 and 3      c) 1 and 4      d) All

Ans: (c)

2. Match the following List-I with List-II  
(bp – bond pair and lp – lone pair)

List-I (Molecule)		List-II (bp & lp)	
A)	$\text{ICl}_2^-$	I)	4 : 2
B)	$\text{H}_2\text{O}$	II)	2 : 1
C)	$\text{SO}_2$	III)	2 : 3
D)	$\text{XeF}_4$	IV)	2 : 2

- a) A-I, B-II, C-IV, D-III      b) A-III, B-IV, C-II, D-I  
c) A-III, B-IV, C-I, D-II      d) A-II, B-I, C-III, D-IV

Ans: (b)

3. **Statement-1:** - Statement-1: D-(+)- Glucose and D-(+)- fructose are formed on hydrolysis of sucrose.

**Statement-2:** - Sucrose is called invert sugar.

Choose the **correct** option

- a) Statement – 1 and Statement – 2 are correct  
b) Statement – 1 and Statement – 2 are incorrect  
c) Statement – 1 is correct and Statement – 2 is incorrect  
d) Statement – 1 is incorrect and Statement – 2 is correct

Ans: (d)



4. A compound having molecular formula  $\text{MX}_3$  has Van't Hoff factor of 2. What is the degree of dissociation?

- a) 0.25                      b) 0.5                      c) 0.3                      d) 0.75

Ans: (c)

5. Correct order of wavelength of the following colors:

- (I) Red                      (II) Yellow  
(III) Blue                      (IV) Violet

- a) I > II > III > IV                      b) IV > III > II > I  
c) IV > III > II > I                      d) II > I > III > IV

Ans: (a)

6. **Statement-1:** - Mohr's salt composed of only 3 types ions - ferrous, ammonium and sulfate.

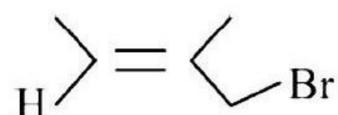
**Statement-2:** - If molar conductance at infinite dilution of ferrous, ammonium, sulphate, ions are  $x_1, x_2, x_3 \text{ Scm}^2 \text{ mol}^{-1}$ . Then molar conductance for Mohr's salt is  $x_1 + x_2 + 2x_3$ .

Choose the **correct** option

- a) Statement – 1 and Statement – 2 are correct  
b) Statement – 1 and Statement – 2 are incorrect  
c) Statement – 1 is correct and Statement – 2 is incorrect  
d) Statement – 1 is incorrect and Statement – 2 is correct

Ans: (c)

7. Find the IUPAC name of the compound



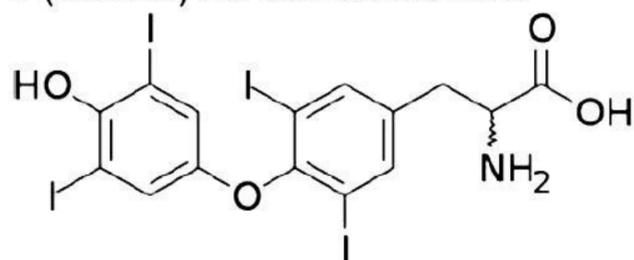
- a) 1-Bromo-4-methylbut-2-ene                      b) 1-Bromo-3-methylbut-2-ene  
c) 1-Bromo-3-methylbut-3-ene                      d) 1-Bromo-2-methylbut-2-ene

Ans: (d)

8. What is the number of valence electrons of the element that has the lowest enthalpy of atomization among the following: Cr, Fe, Co, and Ni?  
 a) 9                      b) 8                      c) 6                      d) 10

Ans: (c)

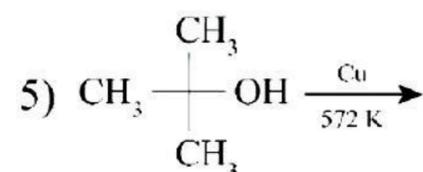
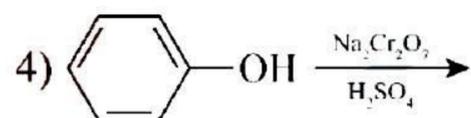
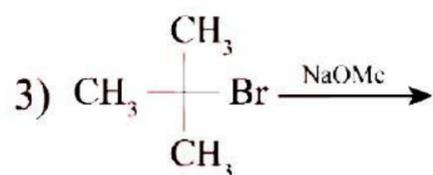
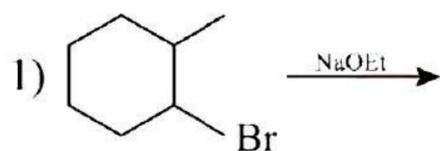
9. Given below is the structure of hormone "Thyroxine". What is the percentage of I (iodine) in the molecule?



- a) 65                      b) 72                      c) 85                      d) 54

Ans: (a)

10. The reactions which can be applied to prepare an alkene by elimination are?



Choose the **correct** answers from the given above options.

- a) 1, 3 and 5 only                      b) 1, 3 and 4 only  
 c) 2 and 4 only                      d) 2 and 5 only

Ans: (a)



- a) Statement – 1 and Statement – 2 are correct
- b) Statement – 1 and Statement – 2 are incorrect
- c) Statement – 1 is correct and Statement – 2 is incorrect
- d) Statement – 1 is incorrect and Statement – 2 is correct

Ans: (c)

16. Given below are two statements.

**Assertion (A):** Sodium on reaction with alcohols liberates  $H_2$  gas.

**Reason (R):** Alcohols are acidic in nature.

In the light of the above statements, choose the correct answer from the options given below:-

- a) Both A and R are correct and R explains A.
- b) Both A and R are correct but R does not explain A.
- c) A is correct but R is incorrect.
- d) A is incorrect but R is correct.

Ans: (a)

17. An octahedral complex having molecular composition  $Co.5NH_3.Cl.SO_4$  has two isomers A & B. The solution of A gives a white precipitate with  $BaCl_2$  solution, the type of isomerism exhibited by the complex is

- a) Linkage isomerism
- b) Geometrical isomerism
- c) Co-ordinate isomerism
- d) Ionization isomerism

Ans: (d)

18. Consider the following values of standard reduction potential,  $E^\circ_{Cu^{2+}/Cu} = +0.34$  V and  $E^\circ_{Ag^+/Ag} = +0.80$  V.

Find  $E_{cell}$  constituted by these two electrodes if, it contains  $0.2M Ag^+(aq)$  and  $1.5M Cu^{2+}(aq)$ .

- a) 0.50 Volts
- b) -0.50 Volts
- c) 0.41 Volts
- d) -0.41 Volts

Ans: (c)

19. Transition metal belonging to 3d series having lowest enthalpy of atomization in its most stable oxidation state forms oxide MO. Nature of oxide is

- a) Highly acidic    b) Amphoteric    c) Highly basic    d) Neutral

Ans: (b)

20. An organic compound weighing 500 mg produced 220 mg of  $\text{CO}_2$ , on complete combustion. The percentage composition of carbon in the compounds is \_\_\_\_ % (nearest integer) (Given molar mass is  $\text{g.mol}^{-1}$  of (C - 12, O - 16))

Ans: 12%

