FIRST TERMINAL EXAMINATION 2025-26
CHEMISTRY

Std: X

Max Score: 40
Time: 1½ Hours

Instructions

- First fifteen minutes are cool off time. Read the questions carefully during this time.
- Write the answers according to the instructions.
- Consider the score while writing the answers.
- Answer only one question for questions having choice.

Answer all the questions from 1 to 4. Each question carries 1 score. (4 x 1 =4)

1. Which of the following pairs represent the monomers of nylon 66?

   A. Phenol , formaldehyde

   B. Adipic acid , vinyl chloride

   C. Adipic acid , hexamethylene diamine

   D. Hexamethylene diamine, phenol

2. An alkene X with two carbon atoms undergo addition reaction with hydrogen to get the product Y. (symbols are not real). Choose the correct option from the following

   A. X- C_2H_4 , Y- CH_4

   B. X -C_2H_6 , Y- C_2H_4

   C. X- C_2H_2 , Y- C_2H_4

   D. X- C_2H_4 , Y-C_2H_6

3. Match the following.

Set-1 (Functional group)	**Set-2 (Common name of the organic compound)**
(a) -O-R	(i) Aldehyde
(b) -CHO	(ii) Carboxylic acid
(c) -COOH	(iii) Alcohol
(d) -OH	(iv) Ether

Choose the correct answer from the options given below.

	(a)	(b)	(c)	(d)
A.	(ii)	(i)	(iii)	(iv)
B.	(iv)	(i)	(iii)	(ii)
C	(iv)	(i)	(ii)	(iii)
D	(ii)	(iii)	(iv)	(i)

4. **Statement 1** : The subshell electron configuration of element X with atomic number 23 is $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^3\ 4s^2$. (symbol X is not real)

Statement 2 : The element X belongs to 4th period and second group in the periodic table.

Which of the following is correct regarding the above statements?

A. Both statements are correct

B. Both statements are not correct

C. Only statement 1 is correct

D. Only statement 2 is correct

Two questions from 5 to 11 have choice. Each question carries 2 scores. (7× 2 =14)

5. Write the IUPAC names of the following organic compounds.

a. $CH_3 - CH_2 - \underset{\displaystyle Cl}{\underset{|}{CH}} - CH_3$

b. $CH_3 - C \equiv C - CH_2 - CH_3$

6. Find A and B and complete the chemical equation.

$$\text{…. A …. + ….B ….} \xrightarrow{\text{Con.}H_2SO_4} CH_3 - COO - CH_2 - CH_3 + H_2O$$

7. (A) The category of certain medicines are given. Mention the function of each.

a. Antiseptics b. Antipyretics

OR

(B) A. To which category do the following medicines belong?

a. Aspirin b. Penicillin

8. The positions of two elements A and B in the periodic table are given below. (symbols are not real)

A- 4^{th} period , group 2

B- 3^{rd} period , group 17

a. Write the subshell electron configuration of A and B.

b. Write the molecular formula of the compound formed by the combination of A and B.

9. One of the chemical equations given below represents a polymerisation reaction.

i. $CH \equiv CH + HCl \rightarrow A$

ii. $nA \rightarrow B$

a. Write the structural formula of A.

b. What is the name of the product B ? Give any one use of it.

10. The IUPAC names of two organic compounds are given. Write their structural formulae.

a. 2,4-Dimethylheptane

b. Hex-2- ene

11. (A) The structural formula of the compound Butan-1-ol is given.

$CH_3 - CH_2 - CH_2-CH_2- OH$

a. Write the structural formula of its position isomer.

b. Write the structural formula of the compound which belongs to the same homologous series having two carbon atoms.

OR

(B) The molecular formula of an alcohol is $C_4H_{10}O$.It has two position isomers.

a. Write the IUPAC names of these isomers.

b. Write the structural formula of any one of the position isomers of this compound.

Two questions from 12 to 17 have choice. Each question carries 3 scores. (6x 3 =18)

12. a. What is meant by isomerism?

b. What are the different types of isomerism?

13. (A) The structural formula of an ether is given.

$CH_3 - CH_2 - O - CH_2 - CH_3$

a. Write the structural formula of its metamer.

b. Write the IUPAC names of both compounds.

OR

(B) The structural formula of an organic compound is given.

$CH_3 - CH_2 - CO - CH_2 - CH_3$

a. What is the IUPAC name of this compound?

b. Write the structural formula and IUPAC name of its metamer.

14. The atomic number of an element is 16.

a. Write the subshell electron configuration of the given element.

b. Find the value of the quantum numbers n and l of the electrons in the outermost subshell of it.

c. Find the number of orientations of the outermost subshell.

15. i. When carbon monoxide reacts with hydrogen in presence of a catalyst at 573K, the product A is obtained.

ii. When A reacts with carbon monoxide in the presence of a catalyst, the product B is obtained.

a. Identify the compounds A and B.

b. Write the structural formula of the homologue of B having one carbon atom.

16. (A) a. Write the IUPAC name of the first member of alcohol family.

b. What is the difference between rectified spirit and power alcohol?

OR

(B) Ethanol is an industrially important alcohol.

a. By which process ethanol is prepared industrially?

b. What is the role of yeast in this process?

17. a. The chemical equation given below represents the combustion of butane. Find X and Y.

$$2C_4H_{10} + ...X.... \rightarrow 8CO_2 + ...Y.... + Heat$$

b. How does thermal cracking differ from combustion?

Question 18 has choice. It carries 4 score **(1 x 4 =4)**

18. (A) The molecular formula of an organic compound is $C_5H_{12}O$.The compound has a bivalent oxygen atom in it.

a. Write the structural formulae of two compounds fulfilling these conditions.

b. What is the functional group present in these compounds?

c. Which type of isomerism is exhibited by these compounds?

OR

(B) Two compounds with molecular formula C_3H_8O are functional isomers.

a. Write their structural formulae.

b. Write the IUPAC names of both the compounds.

c. Write the structural formula of the position isomer of any one of these compounds.