

SETHU BHASKARA MAT HR. SEC. 1
SCHOOL

COMMON QUARTERLY EXAMINATION
SEPTEMBER - 2022

STD: XI

CHEMISTRY

SCORING SYSTEM

PART - I

I choose the correct answer.

1	a. ${}_6C^{12}$	1
2	b. -1	1
3	c. $dz^2, dx^2 - y^2$	1
4	c. Assertion is true reason is false	1
5	c. oxygen	1
6	c. $CO + H_2$	1
7	c. $1P + 2n$	1
8	c. $8.3 \text{ J mol}^{-1} \text{ K}^{-1}$	1
9	c. diffusion	1
10	d. Frictional energy	1
11	b. $K_c = \frac{[CO_2]}{[CO]^2}$	1
12	c. 3	1
13	b. 2-methyl pentane	1
14	c. both (a) and (c)	1
15	c. $-CH_3$	1

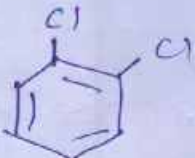

PART - II

Answer any 6 question. Q. NO. 24
Compulsory

16. Correct Explanation

20

(2)

17. $Ni^{+2} - [Ar] 3d^8 4s^0$ 1
 $Fe^{+3} - [Ar] 3d^5 4s^0$ 1
 Fe^{+3} more stable due to half filled electronic configuration
18. Correct definition 1
 Example - Ne, Na^+, F^- (any one) 1
19. isotopes definition 1
 name of 3 isotopes of hydrogen 1
20. Correct definition 2
21. Correct statement 1
 lim 1
 $S = 0$
 $T \rightarrow 0$ 1
22. Correct statement 2
23. Define electrophile 1
 Example 1
24. (i) o-dichlorobenzene 1

 (ii) p-dichlorobenzene 1


32) Homologous series

Correct explanation
example

2m

1m

33)

$$\Delta H_f = \Delta H_1 + \Delta H_2 + \frac{1}{2}\Delta H_3 + \Delta H_4 + U$$

1m

$$U = \Delta H_f - (\Delta H_1 + \Delta H_2 + \frac{1}{2}\Delta H_3 + \Delta H_4)$$

1m

$$U = -411.3 - (108.7 + 495 + 122 - 349)$$

$\frac{1}{2}$ m

$$U = -411.3 - (-376.7)$$

$\frac{1}{2}$ m

$$U = -788 \text{ kJ mol}^{-1}$$

Part IV

34) a) Any two types of redox reactions with example

$2\frac{1}{2} + 2\frac{1}{2}$

b) Correct postulates of Bohr's atom model

5m

35) a) General electronic configuration of

i)

lanthanides
Actinoids

$$\left. \begin{array}{l} 4f^{1-14} 5d^{0-1} 6s^2 \\ 5f^{0-14} 6d^{0-2} 7s^2 \end{array} \right\}$$

2m

(ii) Ionisation potential of Nitrogen is greater than Oxygen

Reason: Electronic configuration of N - $1s^2 2s^2 2p^3$
" " of O - $1s^2 2s^2 2p^4$

Half filled electronic configuration (p subshell) is more stable than partially filled. (or) any relative answer

3m

Part III

25. Any three points about difference between oxidation & Reduction 3 m

26. Any three points - Limitations of Bohr's atom model 3 m

27. Correct explanation for diagonal relationship 2 m



28. Intramolecular hydrogen bonding - definition 2 m
 any one book example 1 m

29. Boyle's law	$V \propto \frac{1}{P}$	—————	$\frac{1}{2}$ m	—————	$\frac{1}{2}$ m
Charles law	$V \propto T$	—————		—————	$\frac{1}{2}$ m
Avogadro's law	$V \propto n$	—————		—————	$\frac{1}{2}$ m
	$V \propto \frac{nT}{P}$			—————	$\frac{1}{2}$ m
	$V = \frac{nRT}{P}$			—————	$\frac{1}{2}$ m
	$PV = nRT$			—————	$\frac{1}{2}$ m

30) Homogeneous equilibrium correct definition 2 m
 equation any one 1 m

31) Trans isomer is more stable cis isomer 1 m
 Reason: In trans bulky (same) groups are present in opposite sides. So less steric repulsion. 2 m

35) b. i) Types of covalent hydrides

- Electron precise
- Electron rich
- Electron deficient

2m

examples

1m

(ii) Any uses of heavy water (any two)

2m

36 a) Derivation of Vander waals equation

$$\left(P + \frac{an^2}{V^2}\right)(V - nb) = nRT$$

1m

Pressure correction

2m

Volume correction

2m

b) Second law of thermodynamics

Entropy statement

1m

Kelvin's "

1m

Clausius "

1m

Efficiency formula

1m

Efficiency never be cent percentage

1m

(or)
related point

37) a) Correct derivation of relation between K_p & K_c cases

4m

1m

b) i) $K_c = [CO_2]$
 $K_p = P_{CO_2}$

(ii) $K_c = \frac{[SO_3]^2}{[SO_2][O_2]}$
 $K_p = \frac{P^2 SO_3}{P_{SO_2} \cdot P_{O_2}}$

$\frac{1}{2} + \frac{1}{2} m$

$\frac{1}{2} + \frac{1}{2} m$

(6)

- 38)
- a) General characteristics of Organic Compounds }
Correct 4 points } 5m
- b) Notes on Inductive effect } 2½m
Mesomeric effect } 2½m

(7)

Handling Teachers

- 1) S. S. S. S.
- 2) S. S. S.
- 3) Smith
- 4) S. R. S.
- 5) S. S. S.
- 6) S. S.

W. S. S. S.
A. S.