|Max. Marks: 70

15x1=15

Class: 11

Answer of the following:

Rogister	 ,		l
Number			

COMMON HALFYEARLY EXAMINATION 2022 - 23 CHEMISTRY

PART-I

1.	Which one of the following is used as a standard for atomic mass.						
	a) ₆ C ¹² b) ₇ C ¹² c) ₆ C ¹³	d) ₆ C ¹⁴					
2.	The total number of orbitals associated with the principal quantum number n = 3 is						
	a) 9 b) 8 c) 5	d) 7					
3.	3. In a given shell the order of screening effect is						
	a) s>p>d>f b) s>p>f>d c) f>d>p>s	d) f > p > s > d					
4.	Heavy water is used as						
	a) moderator in nuclear reactions b) coolant in nuclear r	reactions					
	c) both (a) and (b) d) none of these						
5.	5. The radioactive element of group 1 is	11.0					
	a) rubidium b) cesium c) francium	d) radium					
6.							
	a) 0.082 dm³ atm b) 0.987 cal mol¹ k¹ c) 8.3 J mol¹ k¹	d) 8 erg mol-1 k-1					
7	All the naturally occuring processes proceed spontaneously in a direction which leads to						
	a) decrease in entropy b) increase in enthalp	y -					
	c) increase in free energy d) decrease in free en	ergy					
Q	Solubility of carbon dioxide gas in cold water can be increased by						
	a) increase in pressure b) decrease in pressu	re					
**	c) increase in volume d) none of these						
č.	Security An ideal solution obeys Raoults Law	5 2 2					
	Reason : In an ideal solution, soluent-soluent as well as solute-solute	interactions are similar to solute -					
	soluent interactions.						
	 a) both assertion and reason are true and reason is the correct explanation 						
	 b) both assertion and reason are true but reason is not the correct explan 	ation of assertion					
	c) assertion is true but reason is false d) Both assertion and	reason are false					
10.	 The correct sequence of increasing covalent character is 						
	a) LiCI < NaCI < BeCl. b) NaCI < LiCI < BeC	1,					

c) H,PO

BeCl, < NaCl < LiCl

d) P₂O₅

Mg,P,O, 12. The geometrical shape of carbocation is

LiCI < NaCI < BeCl,

BeCl, < LiCI < NaCl

Linear

b) tetrabedral

Mg, (PO,)

Freon - 113

c) Planer

d) Pyramidal

which of the following is optically active

2 - methyl pentane b)

Citric acid

Glycerol

d) None of these

The name of C,F,Cl, is

Freon - 112

Freon - 114

d) Freon - 115

15. Which among the following is a green house gas?

11. In an organic compound, phosphorus is estimated as

a) CFC CH,

b)

c) O₃

d) All of these

II. Answer any six questions. Question No. 24 is. compulsory.

6x2=12

16. Define Avogadro number.

What are iso electronic ions? Give example.

18. What is efflorescence?

K/11/Che/1

- 19. State the first law of thermodynamics?
- 20. State Le-Chatelier principle?
- Why trans-isomer more stable than cis isomer 2?
- 22. State Huckel rule?
- 23. What is acid rain?
- 24. 12 gram of a non electrolyte solute dissolved in 75 gram of benzene lowered the freezing point of benzene by 0.20k. The freezing point depression constant of benzene 5.12 k kg mole⁻¹. Find the molar mass of the solute.

PART - III

III Answer any six questions of the following questions. Q. No. 33 is compulsory.

6x3=18

- 25. Distinguish oxidation and Reduction.
- 26. Derive De-brogile equation?
- 27. Discuss the position of hydrogen in the periodic table?
- 28. Distinguish ideal gas and real gas?
- 29. Explain the characteristics of Gibb's free energy?
- 30. List the applications of equilibrium constant?
- 31. Explain the ionic bond formation in MgO?
- 32. Define resonance, inductive effect?
- 33. 0.30 g of a substance gives 0.90 g of carbon dioxide and 0.60 g of water calculate the percentage of carbon and hydrogen in it?

PART - IV

IV Answer all five questions.

5x5=25

- 34. (a) (i) Find the oxidation state of oxygen in KO, and OF,
 - (ii) Define and explain Aufbau principle.

(OR

- (b) Explain the pauling method of calculating ionic radius?
- 35. (a) (i) Define diagonal realtionship?
 - (ii) List the uses of plaster of paris?

(OR)

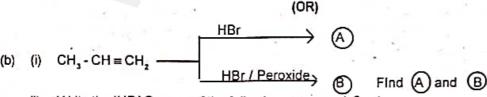
- (b) (i) Explain ortho and para hydrogen?
 - (ii) Define compressibility factor?
- 36. (a) Derive the relation between enthalpy and internal energy? (5)

(OR

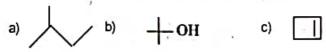
- (b) Derive the ralation between K, and K, for the synthesis of Ammonia? (5)
- 37. (a) (i) Define Van't Hoff factor?
 - (ii) Explain VSEPR theory?

(OR)

- (b) (i) Write Wurt2 fittig reaction?(2)
 - (ii) What is DDT? How will you prepare DDT? (3)
- 38. (a) Balance the following equation using oxidation number method. As $_2S_3$ + HNO $_3$ + H $_2$ O \rightarrow H $_3$ AsO $_4$ +H $_2$ SO $_4$ +NO.



ii) Write the IUPAC name of the following compounds?



K/11/Che/2