

XI - MT

S.P

CHEM

Pre-Public Question Paper – February 2018

Standard XI

CHEMISTRY

(English Version)

Time : 2.30 Hours

Max Marks: 70

PART – I

Note :

Answer all the questions

Choose and write the correct answer

15x1=15

1. 88g of CO₂ contains _____ no of moles
 (a)0.2 (b)2
 (c)0.5 (d)1
2. The maximum no of electrons that can be accommodated in a given sub shell is calculated using the formula
 (a) $2(2l+1)$ (b) $2n^2$
 (c) $(2l+1)$ (d) n^2
3. Deuterium with oxygen give
 (a)oxydeuterium (b)Water
 (c)Heavy water (d)all the above
4. Match the atom with atomic radius and select the correct answer using given below:-

| Atom | Atomic Radius |
|-------|---------------|
| a. Na | 1.160 |
| b. Mg | 2.117 |
| c. Al | 3.186 |
| d. Si | 4.143 |

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

5. The process used for the manufacture of ammonia is _____

(a)Contact process (b)Ostwald process
 (c)Haber's process (d)Linde's process

XI - MT

S.P

CHEM

6. In a cubic unit cell an atom at the edge is shared by _____ unit cells.
 (a)One (b)two
 (c)four (d)eight
7. The adsorbent used in column chromatography is
 (a)alumina (b)Magnesia
 (c)Silica gel (d)all the above
8. In the heterogenous equilibrium $\text{CaCO}_{3(s)} \rightleftharpoons \text{CaO}_{(s)} + \text{CO}_{2(g)}$ the Kc value is given by
 (a) $\frac{[\text{CaO}][\text{CO}_2]}{[\text{CaCO}_3]}$ (b)[CO₂]
 (c)[CaO] (d)[CaCO₃]
9. Which one is correct
 (a) lp-lp > bp-lp > bp-bp (b) lp-lp > bp-bp > bp-lp
 (c) bp-bp > bp-lp > lp-lp (d) bp-lp > lp-lp > bp-bp
10. The Negative temperature of He is
 (a)-80°C (b) +80°C
 (c)-240°C (d)+240°C
11. Work is

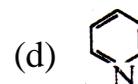
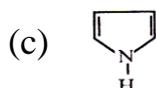
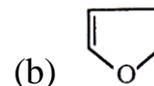
Statement:1 Appears only at the boundar of the system.

Statement :2 Permanent effect in the surrounding.

Statement:3 State function

Statement:4 Path function and it is not a state function.

- (a)Statement 1 correct 2, 3, 4, wrong
 (b)Statement 3 correct 1, 2, 4 wrong
 (c)Statement 3 wrong 1, 2, 4 correct
 (d)All statement are correct.
12. Alkynes contain _____ σ bond and _____ π bond
 (a)3 & 1 (b) 1 & 1
 (c)1 & 3 (d)1 & 2
13. Pyrrole is _____



XI - MT

S.P

CHEM

14. Match the common name with IUPAC name and select the correct answer given below:-

| | Common name | | IUPAC Name | |
|--|-------------|-----------------|------------|-------------------|
| | a. | Propylene | 1. | 2- Butyne |
| | b. | Ethyl chloride | 2. | Ethano +1, d diol |
| | c. | Ethyl acetylene | 3. | Propene |
| | d. | Ethylene Glycol | 4. | Chloro Ethane |
| | | | 5. | 1- butyne |

| | A | B | C | D |
|----|---|---|---|---|
| a. | 3 | 4 | 1 | 2 |
| b. | 3 | 5 | 4 | 2 |
| c. | 3 | 2 | 4 | 5 |
| d. | 3 | 4 | 5 | 2 |

15. Chloropixin is prepared by adding nitric acid to

- (a) Zodo form (b) Chloro form
(c) Bromo form (d) All the above

PART – II

Note:

Answer any six questions in which question No.16 or 20 is compulsory. 6x2=12

16. Balance the following equations.



17. State Hund's rule. Give an example.

18. What are CFC?

19. What are isotonic solutions?

20. Equivalent amounts of hydrogen and iodine are allowed to reach equilibrium at a given temperature. $\text{H}_2 + \text{I}_2 \rightleftharpoons 2\text{HI}$ If 80% of the hydrogen can be converted to hydrogen iodide what is the value of K_c and K_p at this temperature.

21. Define order.

22. Classify the following species into positive and neutral electrophiles.

- a) proton b) Sulphur-tri-oxide c) carbonium d) Ferric chloride

23. What is Wurtz reaction.

24. Write two differences between paper chromatography and TLC.

XI - MT

S.P

CHEM

PART – III

Note:**Answer any six questions in which question No.31 is compulsory.****6x3=18**

25. What is calcinations? Give example
26. Why electron affinity of fluorine is less than that of chlorine.
27. What are isotopes? Mention the isotopes of hydrogen.
28. How many types of cubic unit cell exists?
29. What is octet rule? Give an example.
30. Define zeroth law of thermodynamics
31. 0.154g of iodoform gives 0.2682g of AgI. Calculate the percentage of iodine.
32. What happens when acetylene is passed through red hot tube?
33. How is DDT prepared? Mention its uses

PART – IV

Answer the following questions:-**5X5=25**

34. i) Calculate the normality of solution containing 3.15 gm of hydrated oxalic acid. ($\text{H}_2\text{C}_2\text{O}_4 \cdot 2\text{H}_2\text{O}$) in 250ml of solution. (Molar mass=126)
- ii) Write note on froth floatation process.

(or)

- i) Using the s,p,d notation describe the orbital with the following quantum number
 - i. $n = 4, l = 0$
 - ii. $n = 3, l = 0$
 - iii. $n = 3, l = 1$
- ii) Explain the factors which influence ionization enthalpy

35. i) Differentiate between ortho and para hydrogen
- ii) How is Gypsum prepared? Mention its uses.

(or)

- i) Mention the uses of Nitrogen compounds
- ii) Draw a neat diagram for sodium chloride structure and explain

36. i) What are the units of Vanderwaal's constants "a" and "b".
- ii) Calculate the lattice energy of NaCl using Born Haber cycle from the following data.
 - Sublimation heat of Na=108.KJ mol⁻¹
 - dissociation heat of Cl₂=122KJmol⁻¹
 - Ionisation energy of Na=495KJmol⁻¹
 - The electro affinity of Cl =-349KJmol⁻¹
 - The total heat of formation=-411.3KJmol⁻¹

(or)

- i) Define Vanthoff factor
- ii) Distinguish between reversible and irreversible process.

XI - MT

S.P

CHEM

37. i) Define law of mass action

ii) Describe the factors on which the rate of reaction depends

(or)

i) Describe the classification of organic compounds with an example for each category.

ii) How do you detect the presence of carbon and hydrogen in an organic compound?

38.

How would you convert the following?

(i) Sodium benzoate to benzene.

(ii) phenol to benzene.

(iii) Benzene to toluene.

(or)

An aromatic compound (A) with molecular formula C_6H_6 . (A) reacts with chlorine to give (B) and (A) reacts in the presence of catalyst compound (C). Identify (A), (B) and (C). Explain the reactions.

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