

Ts11C

**Tenkasi District Common Examinations**  
**Common Half Yearly Examination - December 2022**



**Standard - 11**

**CHEMISTRY**

**PART - I**

Time Allowed: 3.00 Hours

Maximum Marks: 70

Choose the best answer.

15×1=15

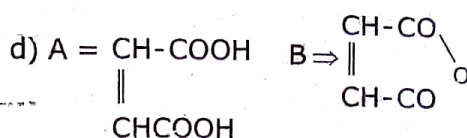
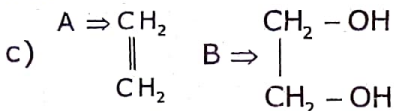
- Which of the following contain same no. of carbon atoms as in 6g of Carbon-12.
  - 7.5 gm ethane
  - 8 gm methane
  - both (a) & (b)
  - none of these
- When 22.4 litres of  $H_2(g)$  is mixed with 11.2 litres of  $Cl_2(g)$  each at 1 atm the moles of  $HCl(g)$  formed is equal to
  - 2 moles of  $HCl(g)$
  - 0.5 moles of  $HCl(g)$
  - 1.5 moles of  $HCl$
  - 1 mole of  $HCl$
- The splitting of spectral lines in an electric field is called
  - Zeeman effect
  - Shielding effect
  - Compton effect
  - Stark effect
- Zeolite used to soften hardness of water is, hydrated
  - Sodium aluminium silicate
  - Calcium aluminium silicate
  - Zinc aluminium borate
  - Lithium aluminium hydride
- Water is a
  - basic oxide
  - amphoteric oxide
  - acidic oxide
  - none of these
- Nitrogen react with  $CaC_2$  the product formed
  - $Ca(CN)_3$
  - $CaN_2$
  - $Ca(CN)_2$
  - $Ca_3N_2$
- Entropy change involved in the conversion of 1 mole of liquid water at 373 K to vapour at same temperature will be \_\_\_\_\_. ( $\Delta H_{vap} = 2.257 \text{ KJg}^{-1}$ )
  - 0.119 KJ
  - 0.109 KJ
  - 0.129 KJ
  - 0.120 KJ
- $N_{2(g)} + 3H_{2(g)} \rightleftharpoons 2NH_{3(g)}$  for the reaction  $\frac{K_c}{K_p}$  is
  - $1/RT$
  - $\sqrt{RT}$
  - $RT$
  - $(RT)^2$
- Bond order of Carbon molecule
  - 1
  - 2
  - 3
  - 2.5
- Column I                      Column II
 

A) $AB_2L_2$	-	i) $PCl_5$
B) $AB_5$	-	ii) $XeF_2$
C) $AB_2$	-	iii) $H_2O$
D) $AB_2L_2$	-	iv) $CO_2$

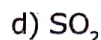
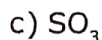
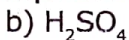
  - iii)      i)      iv)      ii)
  - ii)      iii)      i)      iv)
  - iii)      i)      ii)      iv)
  - iv)      iii)      i)      ii)
- Nitrogen detection in organic compound is carried out by Lassigane's Test. The Blue colour formed is due to the formation of
  - $Fe_3[Fe(CN)_6]_2$
  - $Fe_4[Fe(CN)_6]_3$
  - $Fe_4[Fe(CN)_6]_2$
  - $Fe_3[Fe(CN)_6]_3$
- IUPAC name of  $CH_3-CH=CH-C \equiv CH$ 
  - Pent-2-ene-1-yne
  - Pent-3-ene-1-yne
  - Pent-2-ene-3-yne
  - Pent-1-yne-3-ene
- $A \Rightarrow$   $B \Rightarrow$
  - $A \Rightarrow$   $B \Rightarrow$

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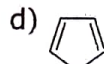
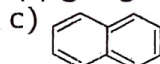
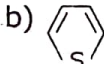
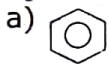
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14. The electrophile in Sulphonation reaction



15. கீழ்க்கண்டவற்றில் அரோமாட்டிக் தன்மை அற்றது எது?

**PART - II****Note: Answer any six questions. Question No. 18 is compulsory. 6x2=12**

16. Calculate the mass of 0.2 mole Sodium Carbonate.

17. Write short note Ionic hydrides.

18. Draw the Lewis structure of Nitrous acid.

19. State Graham's Law of diffusion?

20. Write the value of  $K_c$  for dissociation of  $\text{PCl}_5$ .

21. State Huckel's Rule.

22. IUPAC Name of the following: a)  $\text{CH}_3\text{COH}_3$  b)  $\text{CH}_3\text{COOCH}_3$ 

23. What is Green house effect?

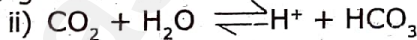
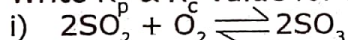
24. State Hendry's Law:

**PART - III****Note: Answer any six questions. Question No. 33 is compulsory. 6x3=18**

25. Derive de-braglie Equation.

26. Calculate the Ionic radius using Pauling's Method.

27. Explain the characteristics of Internal Energy.

28. Write  $K_p$  &  $K_c$  Value for the following reactions.29. Draw the m.o. diagram  $\text{FO}_2$   $\text{CO}$  Molecule and calculate the bond order.

30. Convert chlorobenzene into a) Phenol b) aniline.

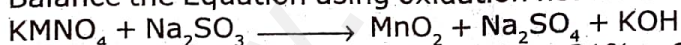
31. Explain the mechanism of  $\text{SN}^2$  reaction.

32. What is Peroxide effect. Explain with example.

33. Calculate the effective nuclear charge of 4s electron in Pottassium atom.

**PART - IV****Note: Answer all the questions. 5x5=25**

34. a) Balance the Equation using oxidation no. method.



(OR)

b) A compound on analysis  $\text{Na} = 14.31\%$ ,  $\text{S} = 9.97\%$ ,  $\text{H} = 6.22\%$ ,  $\text{O} = 69.5\%$ . Calculate the molecular formula of the compound, if all the hydrogen on the compound is present in combination with oxygen as water of crystallisation. (molecular mass in 322).

35. a) i) State Heisenberg uncertainty principle.

ii) Explain the factors which affect Ionisation energy.

(OR)

b) i) What is screening effect?

ii) Short note on Hydrogen bond.

(OR)

36. a) Derive the relationship between  $K_p$  &  $K_c$ .

b) i) What is dipole moment?

ii) Explain Vant Hoff factor.

37. a) i) Describe the classification of organic compound based on their structure.

ii) Write short note on Inductive effect.

(OR)

b) Explain the following.

a) Carbylamine reaction b) Swart reaction

38. a) i) Differentiate BOD and COD.

ii) What is Fluoro chloro carbon.

b) Convert

i) Methyl amine  $\rightarrow$  Methyl isocyanideii) Chloroform  $\rightarrow$  Chloro picrin

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(OR)