

Tsl11C

Tenkasi District

Common Second Revision Test - 2025



Standard 11

Time Allowed: 3.00 Hours

CHEMISTRY

Maximum Marks: 70

Part-I

Choose the correct answer:

15×1=15

- 1) Which one of the following represents 180g of water?
 - a) 5 moles of water
 - b) 90 moles of water
 - c) $\frac{6.022 \times 10^{23}}{180}$ molecules of water
 - d) 6.022×10^{24} molecules of water
- 2) Splitting of spectral lines in an electric field is called
 - a) Zeeman effect
 - b) Shielding effect
 - c) Compton effect
 - d) Stark effect
- 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) The hardness of water can be determined by volumetrically using the reagent
 - a) Sodiumthiosulphate
 - b) Potassium permanganate
 - c) Hydrogen peroxide
 - d) EDTA
- 5) Sodium is stored in
 - a) alcohol
 - b) water
 - c) kerosene
 - d) none of the above
- 6) If temperature and volume of an ideal gas is increased to twice its values, the initial pressure P becomes
 - a) 4P
 - b) 2P
 - c) P
 - d) 3P
- 7) Change in internal energy when 4KJ of work is done on the system and 1KJ of heat is given out by the system is
 - a) +1 KJ
 - b) -5 KJ
 - c) +3 KJ
 - d) -3 KJ
- 8) The value of Δn_g for the reaction $N_2O_{4(g)} \rightleftharpoons 2NO_{2(g)}$
 - a) 1
 - b) 0
 - c) 2
 - d) 3
- 9) Normality of 1.25 M sulphuric acid is
 - a) 1.25 N
 - b) 3.75 N
 - c) 2.5 N
 - d) 2.25 N
- 10) Which one of the following is diamagnetic?
 - a) O_2
 - b) O_2^{2-}
 - c) O^{2+}
 - d) none of these
- 11) The purity of an Organic compound is determined by
 - a) Chromatography
 - b) Crystallisation
 - c) Melting or boiling point
 - d) Both (a) and (c)
- 12) Which of the group has highest +I effect?
 - a) $CH_3 -$
 - b) $CH_3 - CH_2 -$
 - c) $(CH_3)_2 - CH -$
 - d) $(CH_3)_3 - C -$
- 13) Which of the following is aliphatic saturated hydrocarbon?
 - a) C_8H_{18}
 - b) C_9H_{18}
 - c) C_8H_{14}
 - d) All of these
- 14) Assertion : In mono haloarenes, electrophilic substitution occurs at Ortho and Para positions.
Reason : Halogen atom is a ring deactivator.
 - a) If both assertion and reason are true and reason is the correct explanation of assertion.
 - b) If both assertion and reason are true but reason is not the correct explanation of assertion.
 - c) If assertion is true but reason is false.
 - d) If both assertion and reason are false.
- 15) Match the List I with List II and select the correct answer using the code given below the lists.

List-I

- A) Depletion of Ozone layer
- B) Acid rain
- C) Photochemical smog
- D) Green house effect

List-II

- 1) CO_2
- 2) NO
- 3) SO_2
- 4) CFC

CODE:

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

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PART-II

Answer any six questions. (Question number 24 is compulsory). 6×2=12

- 16) Define equivalent mass.
- 17) Write the uses of plaster of paris.
- 18) Suggest why there is no hydrogen (H_2) in our atmosphere. Why does the moon have no atmosphere?
- 19) State the third law of thermodynamics.
- 20) How will you convert benzene into BHC?
- 21) How will prepare DDT?
- 22) Write the principle of column chromatography?
- 23) Which is considered to be earth's protective umbrella? why?
- 24) Calculate the molality of the solution containing 45g of glucose dissolved in 2 kg of water.

PART-III

Answer any six questions. (Question number 33 is compulsory) 6×3=18

- 25) Derive De-broglie equation.
- 26) Why the first ionisation enthalpy of sodium is lower than that of magnesium while its second ionisation enthalpy is higher than that of magnesium?
- 27) Derive Ideal gas equation.
- 28) What is Homogeneous and Heterogeneous equilibrium? Give an example.
- 29) State Raoult law and obtain expression for lowering of vapour pressure when non volatile, solute is dissolved in solvent.
- 30) Draw the Lewis structures for the following species.
 - i) N_2O_5
 - ii) SO_3
 - iii) phosphoric acid
- 31) Explain β -Elimination, reaction with an example.
- 32) How will you prepare benzene from the following : a) acetylene b) phenol
- 33) Write the structure for the following compounds.
 - i) 2,2-dimethyl-1-chloropropane
 - ii) 3-chlorobutanal
 - iii) 3-methylbutan-2-ol

PART-IV

Write all the questions.

5×5=25

- 34) a) i) A Compound on analysis gave the following percentage composition C = 54.55%, H = 9.09%, O = 36.36%. Determine the empirical formula of the compound. (3)
 ii) What is disproportionation reaction with an example. (2) (OR)
- b) i) Explain the time independent Schrodinger wave equation. (3)
 ii) Give the electronic configuration of Mn^{2+} and Cr^{3+} . (2)
- 35) a) i) What is hydrogen bonding? Explain its types with an example. (3)
 ii) Complete the following reaction. (2)
 $KMnO_4 + H_2O_2 \longrightarrow ?$ (OR)
- b) i) Write the characteristics of Internal Energy. (3)
 ii) The equilibrium constant of a reaction is 10. What will be the sign of ΔG ? Will this reaction be spontaneous? (2)
- 36) a) i) What are the significances of osmotic pressure over other colligative properties? (2)
 ii) Linear form of Carbon dioxide molecule has two polar bonds yet the molecule has zero dipole moment why? (3) (OR)
- b) Derive the relation between K_p and K_c . (5)
- 37) a) i) What are electrophiles and nucleophiles? Give suitable examples for each. (3)
 ii) Define retention factor. (2) (OR)
- b) i) Suggest a simple chemical test to distinguish Propane and Propene. (2)
 ii) Compare S_N1 and S_N2 reaction mechanism. (3)
- 38) a) An Organic Compound (A) C_2H_4 decolourises Bromine water. (A) on reaction with Chlorine gives (B). (A) react with HBr to give (C). Identify A, B and C. (5) (OR)
- b) i) Write the preparation for the following. (3)
 i) Phosgene ii) Bi-phenyl iii) Chloropicrin
 ii) Write the difference between BOD and COD. (2)