

MULTIPLE CHOICE QUESTIONS

**B.SC. - 1ST YEAR
CHEMISTRY**

IST PAPER - INORGANIC CHEMISTRY

IIND PAPER - ORGANIC CHEMISTRY

IIIRD PAPER - PHYSICAL CHEMISTRY

BY-

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Multiple Choice Questions

(MCQ)

Class - B.Sc [1st year] ✓
Subject - Chemistry ✓

Paper - Inorganic chemistry
(1st Paper) [1st Paper]

Attempt all the questions and each question carry 02 marks.

- Q1. Full form of ENC.
Ans. Effective nuclear charge.
- Q2. Full form of VSEPR.
Ans. Valence shell electron pair Repulsion.
- Q3. Xenon is type of.
Ans. Noble Gas.
- Q4. Fullerene is
Ans. Third allotrop of carbon [C₆₀]
- Q5. According to VSEPR theory the structure of NF₃ is.
Ans. Tetrahedral
- Q6. The structure of SF₄ is.
Ans. Trigonal bipyramidal.
- Q7. The ability of s-block elements to form Peroxide (or) superoxide depends on which one of the following is.
Ans. Increasing cation radius.
- Q8. The V-shape of SO₂ is due to the presence of
Ans. Two σ and one lone pair of electrons.
- Q9. According to MO theory for diatomic " C_2 " is
Ans. Bond order is two and it is diamagnetic.
- Q10. Asbestos is a silicate mineral of calcium and
Ans. Magnesium

(Contd. on 2)
(P.T.O)

Contd. (2)

B.Sc Ist year

Ist Paper - Inorganic Chemistry

Q.11. According to VSEPR model, the shape of $[XeOF_5]^-$ is

ANS. Octahedral

Q.12. The correct order of the ionic radii is

ANS. $Rb^+ > Sr^{2+} > In^{3+} > Sn^{4+}$

Q.13. Which of the following diatomic molecule would be stabilized by the removal of an electron?

ANS. O_2

Q.14. The effective magnetic moment is maximum for ..

ANS. K_2MnCl_4

Q.15. The alkali-halides that is soluble in pyridine is

ANS. $LiCl$

Q.16. Which among the following has the tendency to form covalent bond.

ANS. Beryllium

Q.17. Which of the following is the strongest base?

ANS. $Ba(OH)_2$

Q.18. Which of the following is a Lewis acid?

ANS. $AlCl_3$

Q.19. Crystal field splitting energy of transition metal complexes can be determined by ..

ANS. UV-Visible spectroscopy.

Q.20. H_2O_2 is a

ANS. Dibasic acid

Q.21. The dark purple colour of $KMnO_4$ is due to ..

ANS. Charge transfer transition.

Q.22. The orange colour of $Cr_2O_7^{2-}$ is due to ..

ANS. Ligand to metal charge transfer transition.

Q.23. Which one of the following compound is peroxide?

ANS. BaO_2

Q.24. Quick lime is ..

ANS. CaO

(Contd. from Page 02)

03

B. Sc Ist year
Ist Paper - Inorganic
Chemistry

Q.25. Which of the following compound of Potassium is known as "Pearl-ash"?

ANS. K_2CO_3

Q.26. Permanent hardness of water is due to the presence of -

ANS. Chlorides and sulphates of calcium and magnesium

Q.27. Hydrilith is the common name of -

ANS. CaH_2

Q.28. The salt of which of the following gives green colour in fire works [अतिशय]

ANS. Ba

Q.29. A fire work gave bright crimson light, it is probably ~~can~~ contained -

ANS. Sr

Q.30. Which of the following chloride is covalent

ANS. $BeCl_2$

Q.31. Which of the following is baryles of water?

ANS. $Ba(OH)_2$

Q.32. The metal that is extracted from sea water is -

ANS. Magnesium

(P.T.O)

(04)

(Contd. from Page No-03)

B.Sc 1st year

1st Paper - Inorganic
Chemistry

Q 33. Ordinary black board chalk
is made of - .

ANS. Gypsum

Q 34. O_2 is

ANS. Paramagnetic

Q 35. Magnetic quantum NO. shows

ANS. Orientation

Q 36. Which of the following is an
energy particle ?

ANS. Photon

Q 37. Electromagnetic radiation with
the highest wavelength in -

ANS. Radio waves

Q 38. ~~Highest~~ Highest electron affinity
in - -

ANS. Cl

Q 39. NaCl crystal is

ANS. FCC [Face centered cubic]

Q 40. Inorganic benzene

ANS. Borazine

Q 41. Boron is a

ANS. Metalloid.

Q 42. Halogens belongs to group

ANS. VII A,

Q 43. Which of the following element
is most metallic.

ANS. Bi

Q 44. The most abundant element
on the earth is - .

ANS. Oxygen (46%)

(05)

(Contd. from page no-04)

B.Sc Ist year
Ist Paper
Inorganic Chemistry

Q 45. ICl_2^- ion is

ANS. Linear

Q 46. "O" in H_3O^+ is

ANS. sp^3

Q 47. Transition of electron from $n=3$ level to $n=1$ level results in -

ANS. Emission spectrum.

Q 48. Transition elements are

ANS. d-block elements

Q 49. A common metal that is used for the extraction of some metals from their oxide

ANS. Al

Note - Ist Paper 50 Marks का होगा
II " " " " "
III " " " " "

Total 150 Marks

(B) 50 Marks का Practical होगा.

Note:- I, II, III Paper में Theory का वजन

50-50 Marks ही होगा

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Multiple choice Questions

[MCQs]

Class - B.Sc [1st year]

Subject - Chemistry

II - Paper - Organic Chemistry
[IInd Paper]

Attempt all questions and
each question carry 02 marks.

Q1. Hyperconjugation is also known as..

ANS. The No-bond Resonance.

Q2. Full form of CTC.

ANS. Charge Transfer complex.

Q3. Huckel's rule is --

ANS. $(4n+2)$ π -electron

Q4. C^+ is --

ANS. carbocation

Q5. C^- is --

ANS. Carbanion

Q6. E^+ and NU^- is

ANS. Electrophile and Nucleophile

Q7. Alkyl group is --

ANS. $R-$

Q8. Phenyl group is --

ANS. C_6H_5-

Q9. Free Radical contained --

ANS. odd (or) unpaired of electrons,

Q10. Full form of R and S convention.

ANS. Rectus and sinister system.

Q11. Full form of E and Z system.

ANS. Entgegen and Zusammen system
(or) nomenclature.

Q12. Bangang bonds present in --

ANS. In cyclopropane.

(PTO)

(Contd from Page 1)

B.Sc (Ist year)
IInd Paper - Organic Chemistry

Q.11. Structure of Naphthalene.

ANS.



Q.12. Full form of DDT

ANS. Dichloro-Diphenyl trichloroethane

Q.13. Full form of BHC

ANS. Benzene Hexachloride

Q.14. Alkyl halide is

ANS. $R-X$ (or) CH_3-X

Q.15. Alkyl side-chain halide is.

ANS. $R-CH_2-X$

Q.16. Alkane is also known as --

ANS. Paraffins.

Q.17. Alkenes is also known as --

ANS. Olefins.

Q.18. Structure of cyclohexane is.

ANS.



Q.19. acid catalysed hydration of alkenes except ethene leads to the formation of --

ANS. secondary and tertiary Alcohols.

Q.20. During dehydration of alcohols to alkenes by heating with con. H_2SO_4 , the initial step is --

ANS. Protonation of alcohol molecules.

Q.21. Full form of HVZ reaction.

ANS. Hell-Volhard Zelinsky reaction

Q.22. Double-headed arrow (\longleftrightarrow) is used for --

ANS. For resonance.

Q.23. \rightarrow , this arrow is known as

ANS. Half-headed arrow.

(P.T.O)

(3)

(Contd from page 2)

B.Sc - Ist year
IInd paper - Organic
Chemistry

Q. 24. The concept of decarboxylation
is used for ---

ANS. The removal of CO₂

Q. 25. The Baeyer's strain theory is
associated with

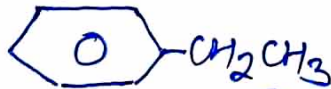
ANS. Cycloalkanes

Q. 26. Ethylene-oxide (or) Epoxide

ANS. $\begin{array}{c} \text{CH}_2 - \text{CH}_2 \\ \diagdown \quad \diagup \\ \text{O} \end{array}$

Q. 27. Structure of alkyl benzene.

ANS.



Q. 28. The flame, which is used
for the welding process

ANS. Oxyacetylinic flame

Q. 29. Name of chemical reactions,
which takes place in alkenes

ANS. Addition reactions.

Q. 30. Which hybridization has maximum
bond angle

ANS. sp

Q. 31. π -bond is formed by
overlapping of ---

ANS. p-orbital

Q. 32. Which is permanent effect

ANS. I effect

Q. 33. Trigonal planar geometry is given
by ---

ANS. sp²

(PTO)

(04)
(Contd. from Page 10-03)

B.Sc 1st year
IInd Paper - Organic Chemistry

Q 34. Which is neutral electrophile.

ANS. $AlCl_3$

Q 35. Which substitution reaction gives, Walden-Inversion concept.?

ANS. SN_2

Q 36. Carbocation is stabilized by ..

ANS. +I group

Q 37. Tartaric acid shows

ANS. Trans-isomer.

Q 38. Meso-Tartaric acid is

ANS. optically inactive

Q 39. Alkenes usually shows

ANS. Electrophilic addition reactions

Q 40. Acetylene on oxidation with O_3 , gives

ANS. Glyoxal

Q 41. Peroxide effect is also known as

ANS. Kharasch effect

Q 42. Benzene shows which type of reaction, when it reacts with Cl_2 in presence of $h\nu$ ---

ANS. Free Radical addition.

Q 43. Name of important catalyst used in Friedel-Crafts reaction, is ---

ANS. Anhydrous $AlCl_3$

Q 44. Most stable conformation of butane, is

ANS. Fully staggered

(PTO)

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Multiple choice Questions

[MCQs]

Class - B.Sc Ist year
Subject - Chemistry
Paper - Physical Chemistry
(3rd Paper) (3rd Paper)

Attempt all questions and
each question carry 02 marks

Q1. PV isotherm concept stand for -

ANS. For Real Gases.

Q2. Full form of RES.

ANS. Reduced equation of states.

Q3. Full form of RMS.

ANS. Root mean square.

Q4. Full form of MFP

ANS. Mean ~~Free~~ Free Path.

Q5. Full form of SSC

ANS. Seven segment cells

Q6. Full form of XRD

ANS. X-ray diffraction.

Q7. Gold number related to -

ANS. For colloidal chemistry

Q8. Simple collision Theory
based on

ANS. Hard sphere model.

Q9. Full form of TST

ANS. Transition state Theory

Q10. The rate of reaction depends
upon - -

ANS. Enthalpy, entropy and
temperature of reaction.

(PTO)

(2) (2)
(Contd. from Page - 01)

B.Sc - 1st year
3rd Paper - Physical Chemistry

Q. 11. The molecule that does not possess permanent dipole moment is.

ANS. BF_3

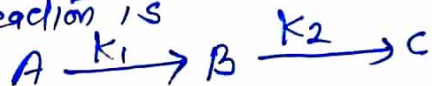
Q. 12. Work done in the free expansion of an ideal gas is zero because

ANS. External pressure acting on the system is zero.

Q. 13. The hydrolysis of urea by urease is

ANS. zero-order at high concentration of urea.

Q. 14. In a consecutive first order reaction is



ANS. $k_1 \gg k_2$

Q. 15. The reaction that proceeds autocatalytically is ---

ANS. An oscillator reaction.

Q. 16. A first order decomposition reaction completes its 50% in 20 minutes, in what does it complete is 87.5%

ANS. In 60 minutes

Q. 17. Which of the following is the correct statements, The enzyme catalyzed reactions is faster than a metal catalyzed reaction, because -

ANS. Its activation energy is lower

Q. 18. Which one of the following statements is correct in respect of a reversible reaction. ?

ANS. The catalyst influences the direct and the reversible reaction to the same extent.

(P T O)

S B.Sc Ist year
3rd Paper - Physical Chemistry

Q. 19. When a second order reaction behaves like a first-order reaction due to the presence of large excess of one of the reactants, so, what is reaction is called?

ANS. Pseudo First order Reaction

Q. 20. A fixed mass of an ideal gas undergoes a reversible adiabatic expansion. In this process the temperature of a gas

ANS. Drops [FIRST 2]

Q. 21. When hydrogen gas is subjected to Joule-Thomson expansion at room temperature, it gets heated up instead of being cooled, because

ANS. In hydrogen, the Vander walls force of attraction is small.

Q. 22. The free energy change (ΔG) of 1 mol of an ideal gas that is compressed isothermally from 1 atm to 2 atm. is --

ANS. $RT \ln 2$.

Q. 23. For a system undergoing phase change like melting (or) vaporisation, this remains constant --

ANS. due to Gibbs function

Q. 24. At chemical equilibrium, Gibbs function is ---

ANS. Zero

Q. 25. For Real Gases, $C_p = C_v$, at ---

ANS. due to absolute zero temperature.

(P.T.O)

(Contd. from Page 02) (4)

B.Sc 1st year
3rd paper - Physical Chemistry

Q. 26. For a system existing at ~~constant~~ constant volume and constant temperature, this parameter is the criteria of equilibrium and stability of a system is --

ANS. due to Gibbs - Function.

Q. 27. Which one of the following is the correct statement and fog is an example of colloidal system of --

ANS. Liquid dispersed in gas.

Q. 28. Butter is a colloid, how it is formed.

ANS. Water is dispersed in fat.

Q. 29. The internal pressure of a van der Waals gas is --

ANS. Inversely proportional to square molar volume.

Q. 30. Which one of the following statement is not correct?

ANS. Lyophobic colloids are destabilized kinetically by the presence of a polymer in the solution.

Q. 31. Why is the Ferric chloride used to stop bleeding in cuts, because --

ANS. Fe^{3+} coagulates blood which is negatively charged sol.

Q. 32. When a liquid boils at constant pressure, the following parameter increases, due to --

ANS. due to entropy.

(P.T.O)

(Contd. from Page No-3)

05

B.Sc - Ist year
3rd Paper - Physical Chemistry

Q. 33. With increasing molecular weight, the viscosity --
ANS. decreases.

Q. 34. Molar refraction is a property, which is

ANS. Additive and constitutive

Q. 35. Unit of surface Tension

ANS. Dynes cm^{-1}

Q. 36. The instrument, used in surface Tension experiment, is

ANS. stalagmometer.

Q. 37. name of RD bottle

ANS. Relative density bottle

Q. 38. Dipole moment of H_2O is 1.85 D, this shows water molecule is --

ANS. Non-linear

Q. 39. In NaCl crystal, each Na^+ ion is surrounded by how many
No. of Cl^- ion, is

ANS. "6"

Q. 40. Radius ratio of $\text{Na}^+ / \text{Cl}^-$ in

Q. Cl^- ion in NaCl crystal is

ANS. 0.524

Q. 41. Colloidal particle size ranges

from --

ANS. $10 - 100 \text{ \AA}$.

Q. 42. Water loving colloids are called --

ANS. Hydrophilic

(PTO)

(06)

(Contd. from Page No-05)

B.Sc - 1st year
3rd Paper - Physical Chemistry

Q 43. Smoke is ..

ANS. Solid dispersed in gas.

Q 44. Tyndall effect is shown by

ANS. Colloidal solution.

Q 45. Emulsifying agent in milk.

ANS. Casein.

Q 46. Which of the following is emulsifier.

ANS. Soap

Q 47. Term not related to colloidal system

ANS. Wave length.

Q 48. Unit of first order reaction is

ANS. sec^{-1}

Q 49. All radioactive decays belongs to ..

ANS. Zero-order.

Q 50. Butter is an -

ANS. Emulsion

Note - (A) Ist Paper 50 Marks अथवा
IInd " " " " " "
IIIrd " " " " " "

Total = 150 marks

(B) 50 Marks अथवा Practical अथवा

अथवा अथवा 200 Marks

Note - I, II, III Paper अथवा Theory अथवा
50-50 marks अथवा

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