

MULTIPLE CHOICE QUESTIONS

**B.SC. - 6TH SEM
CHEMISTRY**

**IST PAPER - INORGANIC CHEMISTRY
(SECTION - A)**

**IIND PAPER - ORGANIC CHEMISTRY
(SECTION - B)**

BY-

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✓ Multiple choice Questions
(MCQs)

Class - [B.Sc [6th sem]

Subject - Chemistry

1st Paper - Inorganic Chemistry

[Section A]

Attempt all questions, and
each question carry 02 marks.

Q1. 3d transition metals is

ANS. Titanium, Chromium and
Manganese are the 3d
transition metals,

Q2. Full form of EAN

ANS. Effective atomic number

Q3. Role of calcium ions, is

ANS. For the purpose of blood clotting

Q4. Role of magnesium ions.

ANS. For energy production.

Q5. A well known naturally occurring
organo-metallic compound is - -

ANS. Vitamin B₁₂ Coenzyme.

Q6. In biological system the metal
ions involved in the dioxygen
transport besides Fe, is

ANS. Another Cu.

Q7. In which one of the following
is metal-metal bond present.

ANS. Mercurous-chloride.

Q8. The pair of metal carbonyl
complexes that are isoelectronic
is - -

ANS. $[\text{Co}(\text{CO})_4]^-$ and $\text{Ni}(\text{CO})_4$ (PTO)

(Contd. from Page 1) (02)

B. Sc [6th sem]

1st paper

Q.9. A transition metal complex has trigonal bipyramidal geometry. The Point group to which the molecule belongs, is -

ANS. D_{3h}

Q.10. What is organo-metallic compound?

ANS. Those contain at least one carbon-metal bond

Q.11. What is π -acceptor?

ANS. An electron acceptor is a chemical entity that accepts electron transferred to it from another compound.

Q.12. What is Zeolites.

ANS. Microporous, aluminosilicate mineral, used as commercial adsorbents and catalysts.

Q.13. Zeiss salt is also known as -

ANS. Metal-olefinic compound in organo-metallic compounds.

Q.14. Hapticity and Denticity is

ANS. Legend Properly

Q.15. Ferrocene is also known as -

ANS. Metallocenes (or) Sandwich compound

Q.16. synergic effect is also known as -

ANS. synergic bonding in metal carbonyl

Q.17. The bonding in metal carbonyl, is

ANS. Back bonding

(Contd. from Page No-01)

(03)

B.Sc [6th Sem]
1st Paper - Inorganic

Q.18. Back bonding takes place in

ANS. In BF_3

Q.19. The functions of sodium and potassium ions.

ANS. To maintain blood pressure, acid-base balance, gastric juice balance including nervous system.

Q.20. The Full form of ATP

ANS. Adenosine tri phosphate.

Q.21. The Role of Na/K pump in biological system.

ANS. Transfer of electrolytes inside and outside of the cell.

Q.22. First transition metal organo-metallic compound is

ANS. $\text{K}[\text{TiCl}_3(\text{C}_2\text{H}_4)]$

Q.23. Effective atomic no. of $\text{Ni}(\text{CO})_4$

ANS. 36

Q.24. $(\eta^5\text{-C}_5\text{H}_5)_2\text{TiCl}_2$ has the colour is

ANS. Red

Q.25. Mono nuclear carbonyl first discovered by -

ANS. A. mond

(PTO)

(04)
(Contd. from Page No-03)

B. SC [6th Sem]

Ist paper - Inorganic
(Section A)

Q. No-26. Element present in major amount in human body, is

ANS. Iron

Q. 27. Nitrogen is converted into ~~ammonia~~ ammonia by --

ANS. by Nitrogenase.

Q. 28. Essential element for thyroid is - - -

ANS. Iodine

Q. 29. In Porphyrin, no. of Pyrrole ring is

ANS. 4

Q. 30. No. of heme unit in haemoglobin is - -

ANS. 1

Q. 31. Pitting disease is due to deficiency of which element.

ANS. Co element

Q. 32. Element present in Vitamin B12

ANS. Co element

Q. 33. Element induced in uric acid metabolism

ANS. Molybdenum.

Q. 34. Cassion (or) Keshan disease is due to deficiency of

ANS. Selenium

(PTO)

(Contd from page 04)

05

B.Sc [6th Sem]

Ist paper - Inorganic
Section A - Chemistry

Q35. IDD stands for
ANS. Iodine deficiency disorder

Q36. Which is useful for contraction
of muscles?

ANS. Ca^{2+}

Q37. Chlorophyll contain --

ANS. Magnesium

Q38. Pernicious (or) ~~addison~~
addison anemia is caused
by deficiency of --

ANS. Vitamin B₁₂.

Q39. $Fe_2(CO)_9$ is

ANS. Diamagnetic

Q40. In $Fe_3(CO)_{12}$, no. of bridging
CO is --

ANS. 2

Q41. In $Fe_2(CO)_9$, no. of bridging
CO is --

ANS. 3

Q42. In $Co_2(CO)_8$, the bridged
structure has

ANS. Two bridging carbonyl group.

(PTO)

(06)

(Contd. from Page No-05)

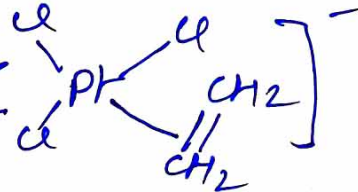
B. Sc [6th Sem]
1st Paper - Inorganic
Section - A

Q. 43. structure of Zeiss salt

ANS.



(or) K^+



[M = Metal]

ionic complex

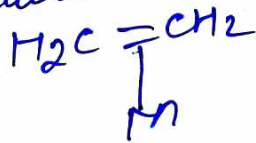
Q 44. No. of Hapticity in Benzene

ANS. 6

Q 45 18 electron rule takes place in

ANS. Organo-metallic compounds.

Q 46. Calculate the hapticity in the following



ANS. 02

Note - आपका Chemistry का कलम 01 पेपर होगा जोकि Section A & Section B में बंटा होगा, इन दोनो papers में Total 70 marks का होगा।
(Theory का) / Practical का होगा

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Multiple Choice Questions
(MCQs)

Class - B.Sc [6th sem]
Subject - Chemistry [Organic]
(Section - B) organic chemistry
IInd Paper - organic chemistry

Attempt all questions and each question carry 02 marks.

Q.1. Chrysene has

ANS. 4 benzene ring

Q.2. ~~map~~ Naphthalene on oxidation in presence of V_2O_5 in air, gives.

ans. Phthalic acid

Q.3. Out of which, Pyrrole, thiophene & furan, which is most reactive towards electrophilic substitution reaction.

ANS. Pyrrole

Q.4. Out of which pyridine and pyrrole, which is most basic.

ANS. Pyridine

Q.5. Correct structure of Pteridine



Q.6. Correct structure of Quinoline.



(PTO)

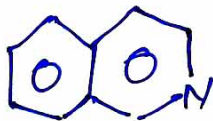
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(Contd. From Page 01)

B.Sc [6th Sem]

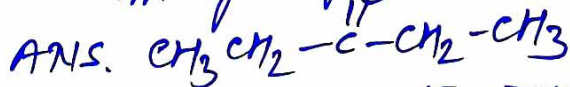
IInd Paper - Organic Chemistry
(Section-B)

Q. 7. Structure of isoquinoline.

ans.



Q. 8. Compound having active methylene group.



Q. 9. Electromagnetic waves with longest wavelengths.

ANS. Microwave.

Q. 10. Which electron transition requires maximum energy.



Q. 11. Which functional group shows $\pi \rightarrow \pi^*$ transition.



Q. 12. Beer's - Lambert's Law is given by

ANS. $A = \log \left(\frac{I_0}{I} \right) = \epsilon c l$

Q. 13. Which is not a chromophore.

ANS. NO

Q. 14. Basic value of butadiene is

ANS. 217nm

Q. 15. Hetero nuclear diatomic molecules are IR active, as they have

ANS. $\mu \neq 0$

(PTO)

(03)

(Contd. from Page No-02)

B.Sc [6th Sem]

IInd Paper - Organic Chemistry
[Section - B]

Q 16. Maximum ir stretching frequency is observed in --

ANS. Alkynes.

Q 17 structure of Furan.



Q 18 structure of Thiophene



Q 19 structure of Naphthalene



Q 20. Full form of Ket.

ANS. Keto-enol tautomerism

Q 21. structure of Anthracene



Q 22. The chemical name of naphthalene-balls.

ANS. Naphthalene

(PTO)

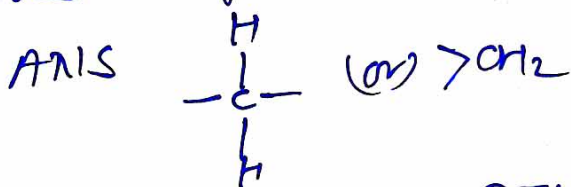
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(Contd. from Page 10-03)

B.Sc [6th sem]

IInd Paper - Organic Chemistry
(Section-B)

Q. 23 methylene Group is



Q. 24. Full form of FTIR

ANS. Fourier Transform
Infrared spectrophotometer

Q. 25. Infrared spectrum takes
place between - -

ANS.

Visible light	IR spectrum	micro wave
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Between visible light and microwaves.

Q. 26. IR spectroscopy is also known
as.

ANS. Vibrational Spectroscopy

27. Wavelength range of IR
Radiation, is

ANS. About 700 nanometer
(nm) to 1 millimeter (mm).

Q. 28. What are the three types of
IR vibrations?

ANS. Three general types of motions,
as translations [external], rotations
[Internal] and vibrations [Internal]

(P.T.O)

(05)

(Contd. from Page No -04)

B.Sc [6th Sem]

IInd Paper - Organic Chemistry
(Section - B)

Q. 29. What colour is Infrared.

ANS. Infrared light ~~just~~ falls just outside the visible spectrum beyond the edge of what we can see as red colour.

Q. 30. What lamp is used in IR spectroscopy. ?

ANS. Light from Quartz-tungsten halogen lamp [QTH] ~~lamp~~ is emitted by a heated filament.

Q. 31. What are the applications of IR spectroscopy. ?

ANS. In mobile phones, Remote system of TV and also in forensic analysis.

Q. 32. Which ~~detect~~ detector is used in FTIR

ANS. Pyroelectric detector and mercury cadmium telluride detector is used.

(PTO)

(06)

(Contd. from Page No - 05)

B.Sc [6th sem]

IInd Paper - Organic Chemistry
(Section - B)

Q 33. What is first mode of vibration?

ANS. An "acoustic guitar" string is a great example

Q 34. What is the fingerprint region?

ANS. 400 cm^{-1} and 1500 cm^{-1}

Q 35. Which mobile has IR Blaster?

ANS. Best phones with an "IR Blaster."

Q 36. How do I know, if my phone has infrared?

ANS. In smart phone, open the camera with IR blaster, then we see that cost flickering light is coming from devices.

Q 37. Infrared radiation or infrared light is a type of -

ANS. Radiant energy.
[Invisible radiations]

(PTO)

(07)
(Contd. from Paper 10-06)

B.Sc [6th Sem]

Q 38. Can I download IR Blaster.

ANS IR Blaster is a free software

Q 39. Why KBr is used in FTIR ?

ANS. Used as window material, which is transparent between this ~~range~~ [range $4000 - 400 \text{ cm}^{-1}$]

Q 40. The Nature of KBr.

ANS: Hygroscopic

Q 41. Why is infrared useful ?

ANS. Useful in electrical heater, TV Remotes, in optical fibres, & For Thermal imaging cameras.

Q 42. What is vibronic coupling ?

ANS. Amplitude of electronic dipole moment coupling vibrations

Q 43. What is Keto-enol tautomerism

ANS. A chemical equilibrium between keto form (or) an aldehyde and an enol-form (or) an alcohol

Q 44. The Keto & enol form is also known as

ANS - Tautomers.

Note :- उत्पत्त Chemistry का अध्याय 0 /
Paper होगा जोकि section A &
Section B से होगा, इन दोनों
Section A & B Total 70 marks का होगा
(Theory 70 marks) / Practical
अंकित होगा,

(PTO)

(08)

(Contd. from 07 Page)

B. SC [6th sem]

IInd Paper — Organic Chemistry
[Section - P₂]

Q 45. UV-Visible spectroscopy is also known as.

ANS. Absorption or Reflectance Spectroscopy.

Q 46. Which lamp is used in UV Vis. spectroscopy?

ANS. Deuterium lamp with tungsten halogen lamp.

Q 47. Which cuvette is used in UV-VIS spectroscopy?

ANS. Quartz cuvette.

Q 48. Which detector is used in UV-VIS spectroscopy?

ANS. Photomultiplier tube.

Q 49. The symbol of maximum absorbance in UV-Visible spectroscopy.

ANS. λ_{max}

Q 50. What are the three types of UV-rays?

ANS. UVA, UVB, UVC

(PTO)

(09)

(Contd. from Page No - 08)

B.Sc [6th - Sem]

IInd Paper - Organic Chemistry
[Section - B]

Q 51. What is the UV wavelength is dangerous ?

ANS. The UV-light [100 - 290 nm] is dangerous.

Q 52. What are the two types of light sources in spectroscopy ?

ANS. Incandescence and Luminescence.

Q 53. Why is Beer's Law is important ?

ANS. To determine the attenuation of radiations [which also includes the measurements of concentration of chemical solutions]

Q 54. Quartz glass in UV is made of.

ANS. Silicon dioxide

Q 55. Common name of Quartz glass in UV

ANS. Vycor, which is 96% silica.

Q 56. The Full form of RI detector in HPLC

ANS. Refractive Index detector

(PTO)

(Contd. from Page No - 09)

B.Sc [6th sem]

IInd Paper - Organic Chemistry
(Section - B)

Q 57. Full form of OES.

ANS. Optical Emission Spectroscopy

Q 58. Does all UV-light kill bacteria?

ANS. The UV-light is highly effective at killing germs.

Q 59. What are three UV-light ranges?

ANS. UVA (or) near [315-400nm]

UVB (or) middle [280-315nm]

UVC (or) [180-280nm]

Q 60. Which lamp is used in HPLC?

ANS. Deuterium lamp.

Q 61. Why UV-Vis spectroscopy is used?

ANS. In analytical chemistry for quantitative determinations [As for transition metal ions & for conjugated organic compounds]

Q 62. In UV-Vis spectroscopy, a beam with a wavelength range between --

ANS. Between 180 and 1100nm.