

**Karmveer Bhaurao Patil University's
Yashavantrao Chavan Institute of Science Satara (Autonomous)
Department of Drug Chemistry**

Question Bank

BDCT-301

One Mark Questions

1. What is glycoprotein?
2. Explain the term homeopathy.
3. What are the main four drug targets?
4. What is first pass effect?
5. Write names of non-renal routes of excretion.
6. Which are the main four drug targets?
7. What is homeopathy?
8. What are the benefits of amla?
9. Define Naturopathy

Ten Mark Questions

- 1) Explain the mechanism of absorption of drug through gastrointestinal track.
- 2) Explain in brief drug metabolism and factors affecting on drug metabolism.
- 3) Explain lipid as a drug target with suitable example.
- 4) Explain lipid as a drug target with suitable example.
- 5) Explain Indian system of medicine in brief.
- 6) Explain the mechanism of absorption of Drug through GIT
- 7) Explain the drug metabolism

Short Answer Question

- 1) Write short note on classification of Ayurvedic drugs.
- 2) Explain factors influencing in drug distribution.
- 3) Explain different types of treatment in Ayurveda.
- 4) Explain basic principles of 'Unani' system of medicine.
- 5) Write short note on Indian system of medicine
- 6) What are the factors affecting on drug intermolecular bonding to target?
- 7) Write short note on siddha system of medicine
- 8) What are the factors affecting on drug in intermolecular bonding to target
- 9) Write short note on classification of ayurvedic drugs
- 10) Explain factors affecting on Absorption of drug
- 11) Explain factor influencing Drug distribution

BDCT-303

One Mark Questions

- 1) Explain the term hyperthermia
- 2) Define electrophoresis
- 3) Define thermometric property

- 4) Why sodium dodecyl-sulfate polyacrylamide is used in SDS-PAGE electrophoresis?
- 5) What are the reasons of hypothermic condition of body?

Ten Mark Question

- 1) What is thermoregulation? explain thermoregulation in human body
- 2) explain agarose gel electrophoresis in detail
- 3) Explain 2D gel electrophoresis in detail

Short Answer Question

- 1) Write short note on clinical thermometer.
- 2) What are the factors affecting the migration of DNA in agarose electrophoresis? Explain in brief
- 3) write short note on paper electrophoresis
- 4) Explain the term a) moving boundary Electrophoresis b) Zone electrophoresis.
- 5) Distinguish between electromotive force and potential difference
- 6) Short Note on factors affecting on adsorption

BDCT-305

One Mark Questions

- 1) Give two examples each of aliphatic & aromatic amines.
- 2) Write bromination reaction of aniline.
- 3) Draw the structure of glucose and fructose.
- 4) What is Riemer-Tiemann Reaction?
- 5) Explain Diazotisation reaction.

- 1) Explain Perkin Reaction.
- 2) Explain Schotten Baumann reaction.
- 3) Write note on Nucleic acid.
- 4) Explain Perkin reaction with help of example.
- 5) Explain fisher peptide synthesis.
- 6) Write the preparation of primary and secondary amine from alkyl halide
- 7) Explain electrophilic substitution reaction of aniline.

BDCT-306

One Mark Questions

- 1) Define qualitative and quantitative analysis.
- 2) Define by Polarography. Which current is used in polarography?
- 3) What is common ion effect?
- 4) Calculate the degree of vibrational mode for H₂O molecule.
- 5) Which are the source of radiation used in IR and UV-Visible spectroscopy.
- 6) How many fundamental modes of vibration present in linear and nonlinear molecule.
- 7) Define solubility product.

- 8) What is the aim of qualitative and quantitative analysis?
- 9) State Beer's law. Give its mathematical equation.
- 10) What is residual and diffusion current.

Ten Mark Question

- 1) Write the general principles and applications of flame Emissions spectroscopy.
- 2) Explain Dropping mercury electrode with help of well labeled diagram.
- 3) Explain in brief sampling techniques used in IR Spectroscopy.
- 4) What is IR spectroscopy, with the help of diagram explain instrumentation of it.
- 5) What is flame emission spectroscopy? Draw diagram of simple flame photometer, explain various components involved in it

Short Answer Question

- 1) Write the applications of polarography.
- 2) Write a note on solubility product.
- 3) What are the advantages and disadvantages of dropping Mercury electrode?
- 4) Explain Ilkovic equation and factors affecting on it.
- 5) Write a note on tungsten halogen lamp.
- 6) Explain Beer-Lamberts law.
- 7) Advantages and disadvantages of dropping Mercury electrode.
- 8) Explain the limitations of flame emission spectroscopy.
- 9) What is Ilkovic equation what are the factors affecting on it.
- 10) Explain selection rule.
- 11) Write qualitative and quantitative applications of flame emission spectroscopy.
- 12) Explain applications of polarography.

BDCT-403

One Mark Questions

- 1) Define term wavelength & frequency.
- 2) Define bathochromic shift give its example.
- 3) Define hypsochromic and hypochromic shift.
- 4) State principle of IR spectroscopy.
- 5) Write wavelength of IR spectroscopy & UV spectroscopy.

Long Answer Questions

- 1) Illustrate the molecular energy diagram.
- 2) Explain Instrumentation of NMR.
- 3) Explain instrumentation of IR spectroscopy & Explain types of bond stretching vibrations.

Short Answers Questions

- 1) Give mathematical expression of Beer-Lambert law.

- 2) Write note on chromophore and auxochrome.
- 3) What is selection rule? Explain IR active & inactive transition with it's eg.
- 4) Short note on chemical shift.
- 5) Explain bond bending vibrations.
- 6) Write note on fingerprint region.

BDCT -404

One Mark Questions

- 1) Define personalized medicine.
- 2) Who discovered the X-ray?
- 3) Define pharmacogenetics.
- 4) Give uses of Debye Sheerer equation.
- 5) What is multi echo imaging?

Ten mark Questions

- 1) Explain Bragg's law give mathematical expression.
- 2) Explain principle, diagram, construction, working of MRI machine.
- 3) Explain four types of telepharmacies.

Short Answer Questions

- 1) Explain powder crystal method give its application.
- 2) Write a note on gradient spoiling & TR spoiling.
- 3) Short note on 3D printing in pharmaceuticals.
- 4) Explain MRI scanner with its diagram.
- 5) Explain two types of magnets.
- 6) Write note on artificial transmutation.

BDCT -405

One Mark Questions

- 1) Define homogeneous and heterogeneous systems.
- 2) State Gibbs Phase rule write its mathematical equation
- 3) Define surface tension, give its unit
- 4) Mention Different types of electrodes
- 5) Define molar conductance, give its unit.
- 6) Define electrochemical and electrolytic cell.
- 7) Define equivalent conductance give its unit.
- 8) What is Kohlrausch law. Give its mathematical equation.

Ten Mark Question

- 1) Derive Nerst equation for measurement of cell emf and single electrode potential.
- 2) Define transport number. Explain in detail moving boundary method of determination of transport number.
- 3) Describe a method of determination of coefficient of viscosity by ostwald's viscometer.

- 4) Explain moving boundary method with the help of diagram
- 5) Explain any two types of gas electrode
- 6) Discuss the applications of phase rule to water system.

Short Answer Question

- 1) After electrolysis of 0.1N HCl solution in Hittorf's cell the concentration of electrolytes in anode and cathode compartments we found to be 0.02N & 0.08N respectively. Calculate the transport number of ions.
- 2) Differentiate reversible cell and irreversible
- 3) Explain the terms specific and molecular refraction.
- 4) Write a short note on Gibbs phase rule.
- 5) Explain any one application of Kohlrausch law.
- 6) Explain the application of emf measurement to determine the equilibrium constant from cell emf data.

BDCT-406

One Mark Questions

- 1) Define metalloporphyrin.
- 2) Draw the structure of porphyrin ring.
- 3) Write the preparation method of diborane.
- 4) Define ligand mention its different types.
- 5) Write the names of essential and trace elements.
- 6) Draw the structure of diborane. What is the hybridization of boron in diborane?
- 7) Define Co-ordinate bond. What are the conditions required for formation of Co-ordinate bond.
- 8) Write the functions of haemoglobin and myoglobin.
- 9) Define ligand. Give its example.
- 10) Define metalloporphyrin. Draw the structure of porphyrin ring.

Ten Mark Question

- 1) Write the postulates and limitations of Werner's theory.
- 2) Define 3d transition elements. Explain electronic configuration and oxidation state of 3d transition elements.
- 3) Discuss the role of Ca^{++} ions with respect to sources and functions.
- 4) Explain the isomerism in Co-ordination complexes with suitable examples.

Short Answer Question

- 1) Differentiate between primary valency and secondary valency.
- 2) Explain the biological functions of Na^+ and K^+ ions.
- 3) Explain the compounds a) Boric acid b) Silicon dioxide.
- 4) Write the applications of EDTA as a chelating agent.

- 5) Explain the formation of $[\text{FeF}_6]^{3-}$ complex.
- 6) Differentiate metal chelate and metal complex.
- 7) Write the applications of EDTA as a chelating agent.
- 8) Write the postulates of Werner's theory.
- 9) Explain the structure of Haemoglobin and myoglobin.
- 10) Write note on allotropes of phosphorus
- 11) Explain the formation of $[\text{Co}(\text{NH}_3)]^{3+}$ complex.