DCHE21

ASSIGNMENT 1

M.Sc. DEGREE EXAMINATION, MAY - 2020
(Second Year)
CHEMISTRY
Analytical Chemistry

MAXIMUM MARKS :30

ANSWER ALL QUESTIONS

Q1) Explain the Theory and working principle of UV-visible spectroscopy.

Q2) Write the principle and applications of Turbidimetry.

Q3) Explain the working principle and experimental procedure of Flame photometry by taking an example.

Q4) Write the principle and applications of precipitation titrations.

Q5) Explain the construction and principle of dropping mercury electrode.

Q6) Write the principle and applications of Electro gravimetry.

Q7) Explain the formation of chelate systems in solvent extraction with an example.

Q8) Explain the construction and principle of Thermal Conductivity Detector (TCD).

DCHE21

ASSIGNMENT 2

M.Sc. DEGREE EXAMINATION, MAY - 2020
(Second Year)
CHEMISTRY
Analytical Chemistry

MAXIMUM MARKS :30

ANSWER ALL QUESTIONS

Q1) Describe the instrumentation and working principle of Infra Red (IR) spectroscopy. Write its applications in structure determination.

Q2) How do you determine stability constants of complexes by UV- Visible Spectroscopy.

Q3) Explain the theory, principle and applications of Atomic Absorption Spectroscopy (AAS).

Q4) Describe the instrumentation, principle and applications of Fluorimetry.

Q5) Describe the Theory, principle and applications of potentiometric Titrations.

Q6) Explain the principle and applications of coulometric analysis. What are its limitations?

Q7) What are Ion-exchangers ? Explain the action of cation exchangers? Write its applications in the separation of cations.

Q8) Explain the preparation of Thin Layer Chromatographic plate (TLC). Write the principle and applications of TLC.

DCHE22

ASSIGNMENT 1

M.Sc. DEGREE EXAMINATION, MAY - 2020
(Second Year)
CHEMISTRY
Inorganic Chemistry

MAXIMUM MARKS :30

ANSWER ALL QUESTIONS

Q1) Explain colour and spectra of actinide ions.

Q2) Discuss the uses of actinides.

Q3) Write a note on Raman Spectroscopy.

Q4) What is the Lanthanide contraction?

Q5) Write the applications of NMR Spectroscopy.

Q6) Explain about Hyperfine Splitting.

Q7) Write about Metalloporphyrins.

Q8) Write a note on toxicity.

DCHE22

ASSIGNMENT 2

M.Sc. DEGREE EXAMINATION, MAY - 2020
(Second Year)
CHEMISTRY
Inorganic Chemistry

MAXIMUM MARKS :30

ANSWER ALL QUESTIONS

Q9) Discuss occurance, Extraction and separation of Lanthanides.

Q9) Explain the Magnetic properties and chemical reactions of Lanthanides and Actinides.

Q9) Discuss X-ray diffraction and basic instrumentation.

Q9) Explain Electron absorption Spectroscopy with applications.

Q9) Explain :

i) Gouy's method.

ii) Faraday method.

Q9) Write principle, instrumentation and applications of Mass Spectroscopy.

Q9) Discuss about sodium pump and explain role of essential elements.

Q9) What is photosynthesis? Write about Nitrogenase.

DCHE23

ASSIGNMENT 1

M.Sc. DEGREE EXAMINATION, MAY - 2020
(Second Year)
CHEMISTRY
Organic Chemistry

MAXIMUM MARKS :30

ANSWER ALL QUESTIONS

Q1) Describe the Fiesher-woodward rules for conjugated dienes.

Q2) Write a note on steric effect in biphenyls.

Q3) Write a note on Nucler over Hauser effect.

Q4) Explain about Nitrogen rule.

Q5) Discuss the types of excitation.

Q6) Explain Electrocyclic reactions.

Q7) Explain Isoprene rule.

Q8) Explain Baeyer-Villager rearrangement.

DCHE23

ASSIGNMENT 2

M.Sc. DEGREE EXAMINATION, MAY - 2020
(Second Year)
CHEMISTRY
Organic Chemistry

MAXIMUM MARKS :30

ANSWER ALL QUESTIONS

Q1) Discuss effect of hydrogen bonding and solvent effect on vibrational frequencies.

Q2) Explain

i) Overtones.

ii) Combination bands.

Q3) What is the chemical shift and explain Mclafferty rearrangment.

Q4) Explain factors affecting fragmentation and explain high resolution mass spectroscopy.

Q5) Discuss photochemistry of conjugated dienes and Aromatic compounds.

Q6) Explain about orbital-correlation diagram with example.

Q7) Write the structure and synthesis of Morphine.

Q8) Explain

i) Beckmann rearrangement.

ii) Benzil-Benzillic acid.

DCHE24

ASSIGNMENT 1

M.Sc. DEGREE EXAMINATION, MAY - 2020
(Second Year)
CHEMISTRY
Environmental Chemistry

MAXIMUM MARKS :30

ANSWER ALL QUESTIONS

Q1) How do you determine Humus in soil samples ?

Q2) What is Lithosphere ? Explain the effects of animals on weathering.

Q3) Write the effects of photochemical smog on Atmosphere.

Q4) How do you analyze hydrocarbons in Air samples?

Q5) Explain the effects of water pollution due to Thermal wastes.

Q6) Explain Industrial water pollution.

Q7) Write the principle and applications of electrodialysis.

Q8) How do you collect oxides of carbon using monitoring equipment?

DCHE24

ASSIGNMENT 2

M.Sc. DEGREE EXAMINATION, MAY - 2020
(Second Year)
CHEMISTRY
Environmental Chemistry

MAXIMUM MARKS :30

ANSWER ALL QUESTIONS

Q1) Describe the functions of soils and soil colloids.

Q2) Write the determination of total nitrogen in soil samples.

Q3) Write about the sources for Sulphur and Carbon monoxide and their emission of air pollution.

Q4) How do you analyze oxides of sulphur in Air Samples ?

Q5) Explain hydrological cycle in detail.

Q6) Discuss the effects of water pollution due to Arsenic and salenium.

Q7) How do you determine chemical oxygen demand (COD) in water samples ?

Q8) Explain the use of coagulants and disinfection methods of water treatment.