

Internal Assessment of B. Sc. Sem-VI, Chemistry (Hons.)

- Candidates are required to give their answers in their own words as far as practicable.
- Answer all the questions.

CORE-XIII & XIV

- Q 1.** (a) Explain solubility and solubility product. Discuss their role in precipitation.
 (b) Define common ion effect and describe its role in qualitative analysis of inorganic mixtures.

OR

What are polyphosphazenes ? How are Polyphosphazenes synthesized ? Discuss the important reactions with any two

- (i) Water (ii) Ammonia (iii) GR

- Q 2.** Give the suitable method of synthesis and their applications of any three of the following dyes :
- (a) Congo red (b) Triphenyl methane (c) Malachite green (d) Fluorescein (e) Indigotin.

OR

Write short notes on the following :

- (i) Fermi resonance
 (ii) Fingerprint region
 (iii) Effect of hydrogen bonding on IR absorption for frequency

- Q 3.** What is Mutarotation ? How is Arabinose converted into glucose by the Killiani-Fischer synthesis.

OR

How are the following radicals tested in presence of each other in a salt mixture

- (a) CO_3^{2-} & SO_4^{2-} (b) Cl^- & Br^- & I^- (c) Ni^{2+} & Co^{2+} (any two)

- Q 4.** (a) what is Wilkinson's catalyst ? How does it hydrogenate to olefins ? Discuss its mechanism.
 (b) What is Hydroformylation or Oxo process ? Discuss its mechanism ?

OR

Write short notes on :

- (a) Fischer Tropsch reaction (b) Silicons.

- Q 5.** (a) What are alkaloids? Give their classification with one example from each.
 (b) How was the structure of Quinine established ? Give its synthesis.

OR

How is ring size of glucose determined ? Deduce the open chain structure of D-(+)-glucose.

DSE-III & IV

Q 6. Discuss the manufacture, properties and applications of KMnO_4 or sodium thiosulphate.

OR

What is greenhouse effect ? How can greenhouse effect be controlled ?

Q 7. Provide green route for the synthesis of any three :

(i) Catechol (ii) BHT (iii) Citral (iv) Urethane

OR

What are the goals of Green Chemistry ? what are the obstacles in receiving the goals of Green Chemistry ?

Q 8. Outline analysis of air pollutants SO_2 and NO_x in a given sample.

OR

What is nuclear disaster ? How can we prevent nuclear disaster ?

Q 9. Discuss the manufacture, properties, uses and hazards of borax.

OR

Define ecosystem. Explain classification of ecosystem.

Q 10. Discuss the benefits of synthesis by the use of microwave. what are the limitation of microwave assisted synthesis ?