



বিদ্যাসাগর বিশ্ববিদ্যালয়  
**VIDYASAGAR UNIVERSITY**

**Question Paper**

**B.A./B.Sc./B.Com. Part-III (1+1+1) Examination 2020**

**3rd Year (General)**

**Subject: CHEMISTRY**

**Paper: IV**

**Full Marks: 40 (Theory) + 50 (Practical) = 90**

**Time: 3 Hours**

*Candidates are required to give their answer in their own words as far as practicable.  
Questions are of equal value.*

Answer any **one question** [within 250 words] from each Group.

**Group - A (Theory)**

1. Discuss the basic principle of TLC (Thin Layer Chromatography) and HPLC (High Performance Liquid Chromatography).
2. Define hydrogenation of oil and also discuss the physicochemical principles of hydrogenation of oils.
3. Discuss the process of manufacture of Portland cement.
4. Discuss the distillation process of crude petroleum into principle products with flowsheet diagram.
5. Write short note on Nylon 66 and superphosphate of lime.



6. Write down the primary idea on DNA and RNA.
7. Discuss the following topics with two example- food flavour, food colour, food preservatives and artificial sweetener.
8. Describe the preparation and use of following drugs: aspirin and sulphanilamide.
9. Discuss about the preparation, application and residual toxicity of gamma-xane pesticide.
10. What do you know about accuracy and precision of quantitative analysis? What is the difference between systematic and random errors?
11. Write a short note on dodecyl benzene sulphonate and methyl orange dye.
12. Discuss the manufacture and processing of glass.

### **Group - B (Practical)**

1. Explain the procedure of separation of chemicals by Thin Layer Chromatography (TLC) technique.
2. Write down the principles and methodology of conductometric titration of mixed acid (HCl + CH<sub>3</sub>COOH) by a strong base NaOH.
3. Discuss the principle and methodology involved in the determination of total hardness of water.
4. Write down the detail procedure for the estimation of available oxygen in pyrolusite.
5. Discuss the principle and methodology for the estimation of iron in Portland cement.
6. Write down the principle and methodology for the estimation of zinc in brass.
7. Discuss the principle and methodology for the determination of the strength of H<sub>2</sub>O<sub>2</sub>.
8. Write down the principle and methodology for the determination of intrinsic viscosity of a polymer.
9. Write down the principle and methodology for the estimation of copper in brass.
10. Discuss the principle and methodology for the determination of pH of an unknown solution by colour matching method.