

**RAN-1903080203030003****M.Sc. (Sem. - III) Examination October - 2025****Chemistry (Organic)****(Paper-III) Organic Chemistry in industry****Time: 3 Hours]****[Total Marks: 70**

સૂચના : / Instructions (1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી. Fill up strictly the above details on your answer book (2) Figures to the right indicate full marks of the questions.	Seat No.: <table border="1"> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table> Student's Signature						

- Q.1. Answer any THREE of the following: 18**
- Discuss drug discovery and explain clinical testing of drug.
 - Explain the sequence of research activities in the development of new drug.
 - What are herbicides? Classify organic herbicides. Explain phenoxy aliphatic acid herbicides.
 - Give chemical classification of organic insecticides. Explain phosphorous containing organic insecticides.
- Q.2. Answer any THREE of the following: 18**
- Explain the classification of dyes based on methods of application.
 - Discuss paper dyes, food dyes and medicinal dyes with suitable examples.
 - Explain bathochromic, hypsochromic, hypochromic and hyperchromic effects.
 - Discuss the theories of Amstrong and Nietzki's regarding colour and chemical constitution.
- Q.3. Answer any THREE of the following: 18**
- What are drugs? Give the classification of drugs on the basis of their chemical structure.
 - Discuss briefly biological defense and chemical defense.
 - Explain the factors affecting on drug action. Discuss the Ferguson principle.
 - Explain the different routes of drug administration.
- Q.4. Answer any THREE of the following: 16**
- Explain different types of amination unit processes. Discuss the industrial application of amination unit process in the manufacturing of dyes.
 - What are sulphonation and sulphation? Name the different sulphonating agents. Discuss the industrial applications of sulphonation unit process in the manufacture of drugs.
 - Define unit process and unit operation. Discuss the industrially important chemicals obtained by chlorination unit processes.
 - What is nitration? Give reaction mechanism of nitration. Discuss the industrial applications of nitration unit process in the manufacture of explosives.