



**M.Sc. II Semester Degree Examination, September/October - 2022**

**INDUSTRIAL CHEMISTRY**

**DSC 6 : Chemistry of Natural Products, Reagents in Organic  
Synthesis and Heterocyclic Compounds**

Time : 3 Hours

Maximum Marks : 70

**Note :** Answer **any five** of the following questions with question No. 1 is **compulsory**. Each question carry **equal** marks.

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|----|-----|---|---|
| 1. | (a) | What is isoprene rule ? Explain with example.   | 4 |
|    | (b) | Establish the structure of papavarine.  | 5 |
|    | (c) | Give an account of general methods of structure elucidation of Terpenoids.              | 5 |
| 2. | (a) | Determine the ring structure of D-glucose.  | 4 |
|    | (b) | Give an account of solid phase peptide synthesis.                                       | 5 |
|    | (c) | List out various types of RNA and give their functions.                                 | 5 |
| 3. | (a) | Explain IUPAC nomenclature of heterocyclic compounds.                                   | 4 |
|    | (b) | Arrange the following in the increasing order of their basicity and give justification. | 5 |
|    |     | (i) Pipyridine      (ii) Pyridine      (iii) Pyrrole                                    |   |
|    | (c) | Explain the Fischer-Indole synthesis.   | 5 |
| 4. | (a) | Explain the applications of DCC in organic synthesis.                                   | 4 |
|    | (b) | Describe the uses of Osmium Tetroxide.  | 5 |
|    | (c) | Write a note on Phase transfer catalysts.   | 5 |
| 5. | (a) | With illustrative example explain Chromophore and Auxochrome.                           | 4 |
|    | (b) | What is Wood-ward Fieser rule ? Explain.  | 5 |
|    | (c) | Sketch and explain the instrumentation of UV-V is spectrophotometer.                    | 5 |
| 6. | (a) | Outline the skroup synthesis of Quinoline.  | 4 |
|    | (b) | Explain any two methods of synthesis of benzofuran.                                     | 4 |
|    | (c) | Explain the 2 and tertiary structure of protein.  | 6 |



7. (a) Explain the uses of DDQ in organic synthesis. **7**  
(b) Write a note on : **7**  
(i) LAH  
(ii) Different modes of electronic transitions.
8. (a) List out the blocking agents used in peptide synthesis and explain their uses with example. **5**  
(b) Write a note on crown ethers. **4**  
(c) Give the structure and synthesis of ergosterol. **5**

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