

**B.Sc. Sem. – IV**  
**Industrial Chemistry, Paper- ICHCC-403, Subject Code: 21022**  
**Subject Title – Study of various unit processes - I**

Time: 2.30 Hours

Maximum Marks: 70

- Que.1 (A) How industrially  $\alpha$ -nitro naphthalene was manufactured? [10]  
(B) Give industrial application of  $\alpha$ -nitro naphthalene. [04]  
OR
- Que.1 (A) How industrially m-dinitrobenzene was manufactured? [10]  
(B) Give industrial application of m-dinitrobenzene. [04]
- Que.2 (A) How industrially anthraquinone-1-sulfonic acid was manufactured? [10]  
(B) Give industrial application of anthraquinone-1-sulfonic acid. [04]  
OR
- Que.2 (A) Write a brief note on sulfonation kettle. [10]  
(B) Write a short note on sulfating agents. [04]
- Que.3 (A) How industrially xylidine was manufactured? [10]  
(B) Give industrial application of xylidine. [04]  
OR
- Que.3 (A) Write a brief note on iron and acid reduction. [10]  
(B) Give industrial application of m-nitroaniline. [04]
- Que.4 (A) How industrially formaldehyde was manufactured? [10]  
(B) Give industrial application of formaldehyde. [04]  
OR
- Que.4 (A) How industrially acetic acid was manufactured? [10]  
(B) Give industrial application of acetic acid. [04]
- Que.5 (A) Write a brief note on chlorination unit process. [10]  
(B) Give industrial application of DDT. [04]  
OR
- Que.5 (A) Write a brief note on bromination unit process. [10]  
(B) Give industrial application of chloral. [04]