

**Semester-III, M.Sc. (Industrial Chemistry) Examination**  
**November - 2014**  
**Paper- IC- 11: Unit operations & Unit processes – II**  
**Subject Code: 3568**

Time: 2.30 Hours

Total Marks: 70

- Que.-1 Write a note on any two. 14  
(1) Filter press (3) Drum dryer  
(2) Centrifuge (4) Spray column
- Que.-2 Write a note on any two. 14  
(1) Filter medium (3) Rotating disc extractor  
(2) Filter aid (4) Spray column extractor
- Que.-3 What is nitrating mixture and nitronium ion? Briefly explain mechanism of nitration with example. 14
- OR
- Que.-3 What is oxidation and oxidative reaction? Give manufacture of formaldehyde from methanol with flow sheet diagram. 14
- Que.-4 Differentiate reduction and amination? Give industrial production of xylidine from nitroxylenes by reduction. 14
- OR
- Que.-4 What is esterification? How industrially esterification is used? Ethyl acetate is manufactured? 14
- Que.-5 What is unit operation? Give detail account of Mixing unit operation with equipments. 14
- OR
- Que.-5 Give the nature and characteristics of bulk solids. Give brief account on conveyors with different examples. 14