[Time: 3 Hours] [Max. Marks: 75]

## Pharmaceutical Process Chemistry -II Q.P. CODE: 5160

Your answers should be specific to the questions asked. Draw neat, labeled diagrams wherever necessary.

## LONG ESSAY (Answer any Three)

3 X 10 = 30 Marks

- Discuss the various stages of scale up process in detail.
- 2. Define crystallization? How it is attempted from aqueous and non-aqueous solutions?
- 3. Discuss catalytic hydrogenation by citing examples. Write a note on metal hydrides.
- 4. Discuss the basic description of the occupational health and safety assessment series (OHSAS 1800).

## SHORT ESSAY (Answer any Nine)

9 X 5 = 45 Marks

- 5. Write a note on genotoxic impurities in API.
- 6. Define nucleation. Write a note on factors affecting nucleation.
- 7. Write in detail about the various nitrating agents involved in nitration.
- 8. Discuss the significance of validation of large scale process.
- 9. Discuss the significance of steam distillation.
- 10. Elaborate the kinetics of halogenations.
- 11. Discuss the significance of H<sub>2</sub> O<sub>2</sub> as nonmetallic oxidizing agents.
- 12. Write a note on characteristics of cost-effective routes.
- \* \* \* \* 13. Discuss fermentation process with respect to production of statins.
- 14. Write a note on hazards labels of chemicals.

