[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 concept of validation of large scale process in detail.
- 2. What are various fire hazards? Discuss various types of fire extinguishers.
- 3. Explain aerobic fermentation? Write a note on production vitamins.
- 4. Discuss the various parameters of liquid equilibria. Write in detail about counter current extraction.

## SHORT ESSAY (Answer any Nine)

9 X 5 = 45 Marks

- 5. Discuss the Scale up process of API with respect to case study.
- 6. Define Filtration. Write a note on centrifugal filtration.
- 7. What are the general methods available for preparation of polymorphs?
- 8. Discuss various factors involved in moving from bench to pilot plant to full production.
- 9. What are the various process equipment available for technical nitration.
- 10. What are effluents? How are they managed in pharmaceutical industry?
- 11. Write a note on catalytic halogenations.
- 12. Explain various hydrogen transfer reaction by citing various examples.
- 13. Discuss various types of oxidative reactions.
- Discuss types of halogenations. Write a note on industrial halogenations process. 14.

