UKA TARSADIA UNIVERSITY

M. Pharm (Pharmaceutical Technology) (3rd Semester)
Subject : 040120302-**Pharmaceutical Technology III**

Time : **10**:**0**0 **a**m to **01**:**0**0 pm Date : **08**/**0**1/201**4**
Duration : 3Hours **Max. Marks : 70.**

Instructions:
1. Attempt all questions.
2. Write each section in a separate answer book.
3. Make suitable assumptions wherever necessary.
4. Figures to the right indicate full marks.
5. Draw diagrams/figures whenever necessary.

Section-I

Q-1 Answer the following: **[11]**

a) Explain aerosol flow method for nanoengineering. [03]

OR

a) Write the equation correlating product temperature, mass transfer resistance and sublimation rate with reference to freeze drying of pharmaceuticals. Explain each term.
b) Describe Fluid bed processing of pharmaceuticals and its scale up. [08]

Q-2 Answer the following: **[12]**

a) Enlist various techniques employed in manufacturing of nanoparticles. Explain preparation of nanoparticles by microemulsion and spray freezing techniques. [08]

OR

a) "Physical appearance of the dried cake, residual moisture, reconstitution time and clarity of the constituted solution are dictated by the nature of the formulation and conditions used during processing." Justify the statement with reference to lyophilization of pharmaceuticals.
b) Write a note on high pressure homogenization. [04]

Q-3 Answer the following: (Any 2) **[12]**

a) Describe Brownian motion, zeta potential and Ostwald ripening with reference to nanoparticles.
b) Discuss strategies for recovery of nanoparticles.
c) Describe Bulking agents, surfactants and stabilizers employed in lyophilization process.

Section-2

Q-4 Answer the following: **[11]**

a) Write a note on personal contamination control with reference to sterile product manufacturing. [03]

OR

a) Explain the role of different components involved in TIMERx system.
b) Describe RingCap Technology as an oral controlled release system. [08]

Q-5 Answer the following: **[12]**

a) What do you understand by aseptic processing of parenterals? Classify aseptic processing environments. Discuss the criteria of temperature, humidity, pressure and airborne particles of each environment. [08]

OR

a) What are the advantages of D-Trans System? Explain different types of D-Trans Systems and its components along with examples. Enlist techniques to measure skin permeation.
b) Explain chemical and biological indicators employed in sterilization. [04]

Q-6 Answer the following: (Any 2) **[12]**

a) Describe filter efficiency evaluation tests.
b) Write a note on validation of Hot air oven.
c) Discuss DepoFoam Technology.
