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SEAT No. :

P3987

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M.Pharmacy (Semester - I & II)

**STERILE PRODUCTS FORMULATION & TECHNOLOGY
(2013 Pattern)**

Time : 3 Hours]

[Max. Marks : 50

Instructions to the candidates :

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*

Q1) Explain physico-chemical, formulation considerations in small volume parenterals. **[10]**

Q2) Solve any three : **[15]**

- a) Explain the design concept of filling area in sterile product manufacturing unit.
- b) Explain the liposomes as drug delivery system.
- c) What are different parenteral irrigating solutions? Explain the fundamentals for peritoneal dialysis solutions.
- d) Explain the possible hazards associated with parenteral therapy.

Q3) Write short notes on (any three) : **[15]**

- a) Manufacturing of freeze dried sterile product.
- b) Glass as packaging material for sterile products.
- c) Industrial autoclaving.
- d) FFS and BFS technology.

Q4) Explain the GMP requirements related to premises, sanitation, hygiene and personnel in sterile manufacturing units. **[10]**

OR

What are the limitations in ophthalmic drug delivery systems? Write a note on ocular inserts.

