

Day : **Friday**
Date : **27/04/2018**

S-2018-3972

Time : **10.00 AM TO 01.00 PM**
Max. Marks : **80**

N.B.:

- 1) **Q.No.1 and Q.No.5 are COMPULSORY.** Out of the remaining questions attempt **ANY TWO** questions from each section.
- 2) Answers to both the sections should be written in **SEPARATE** answer books.
- 3) Draw neat and labeled diagram **WHEREVER** necessary.
- 4) Figures to the right indicate **FULL** marks.

SECTION – I

- Q.1** Solve **ANY FIVE** of the following **(10)**
- a) Enlist various parenteral routes of administration.
 - b) What is nitrogen storage system in industry?
 - c) What is thermal death time?
 - d) Comment on sodium equivalency test.
 - e) How clarity test of injectibles is performed?
 - f) Show schematically environmental zones in a parenteral section.
 - g) State merits of Plackett- Burman factorial design.
- Q.2** a) Give a detailed account of HVAC system in a parenteral section. **(08)**
b) Discuss formulation of sterile solutions for injectibles. **(07)**
- Q.3** a) Discuss sterile suspensions and dry powders for suspensions. **(08)**
b) Discuss sterility testing of parenterals. **(07)**
- Q.4** Write notes on (**ANY THREE**) **(15)**
- a) Pyrogen elimination and testing.
 - b) Batch Vs continuous operation.
 - c) Dynamic storage of sterile water for Injection.
 - d) Physicochemical properties in design of SVP's.
 - e) Additives in Injectibles.

SECTION –II

- Q.5** Answer **ANY FIVE** of the following: **(10)**
- a) Concentrated RBCs.
 - b) Formulation of contact lens solution.
 - c) Siliconization of glass containers.
 - d) Coring of rubber closures.
 - e) Use of acid citrate dextrose in blood collection units.
 - f) What are sleeve stoppers?
 - g) Explain optical property of glass containers.
- Q.6** a) Give a detailed account of types of glass. **(08)**
b) Discuss composition of rubber closures. Discuss galvanization process. **(07)**
- Q.7** a) Discuss formulation of multiple electrolytes LVP. **(08)**
b) Discuss GMP in a parenteral section. **(07)**
- Q.8** Write notes on (**ANY THREE**) **(15)**
- a) Plasma fractions.
 - b) FFS technology.
 - c) Evaluation of HEPA filters.
 - d) Cost effectiveness of LVP.
 - e) Mechanical properties of plastic containers.