

Third Year Pharm. D : SUMMER - 2019
SUBJECT: PHARMACEUTICAL FORMULATIONS

Date: **Sunday**
Day: **21/04/2019**

S-2019-4516

Time: **10.00 A.M. TO 01.00 P.M.**
Max. Marks. **70**

N.B.

- 1) Question **ONE** and **FIVE** are **COMPULSORY**. Out of remaining questions answer any **TWO** from each section.
- 2) Answer to both the section should be written in **SEPARATE** answer books.
- 3) Figures to the **RIGHT** indicate **FULL** marks.

SECTION-I

- Q.1 a)** Answer any **FOUR** of the following. **(08)**
- i) A liquid oral bottle indicates labeled capacity of 30 ml. When it is checked for filled volume in the containers the average reading of 10 samples was 25 ml. Does it pass the test as per Indian pharmacopoeia?
 - ii) An oil is to be formulated as o/w emulsion and its R-HLB value is 9. Suggest suitable emulsifying system from following surfactants to produce stable emulsion. HLB value of span 80 = 4.3, Span 60 = 4.7 Tween 60 =14.9 and Tween 80 =15.
 - iii) Explain principle of co-solvency.
 - iv) Describe stability requirements of suspension according to stokes law.
 - v) Write properties of water washable type of ointment base.
- b)** Discuss methods to determine re-dispersability of suspension. **(03)**
- Q.2** Discuss large scale manufacturing of suspensions. **(12)**
- Q.3 a)** Comment on stability of suspension having zeta potential values of + 5 mV, + 25 mV and + 50 mV. **(07)**
- b)** Discuss mechanism of percutaneous absorption of drug. **(05)**
- Q4** Write short notes **ANY THREE** **(12)**
- a) Ophthalmic ointment.
 - b) Suppository bases.
 - c) Evaluation of suppository.
 - d) Technical aspects of formulation design.

P.T.O.

SECTION-II

- Q.5 a)** Answer any **FOUR** of the following. **(08)**
- i) Suggest formulation to prolong nasal residence of nasal drops as brain targeted drug delivery system.
 - ii) Write rational of formulating enteric coated tablets.
 - iii) Write principle of buccal drug delivery system.
 - iv) A moisture sensitive drug to be formulated as tablet for paediatric use. Suggest suitable tablet formulation.
 - v) What is capping and sticking? How it can be avoided?
- b)** Write note on targeted drug delivery system. **(03)**
- Q.6** Discuss in detail formulation aspects of large volume parenterals and write sterilization process involved in it. **(12)**
- Q.7 a)** Discuss in detail quality control test for capsule. **(07)**
- b)** An antihypertensive drug with half life ($t_{1/2}$) 30 minute required to administer 3 time a day for prolong therapy. Suggest an alternative drug delivery system. **(05)**
- Q.8** Write short notes on **ANY THREE** **(12)**
- a) Evaluation of compressed tablets.
 - b) Small volume parenterals.
 - c) Merits of novel drug delivery over conventional drug delivery.
 - d) Applications of soft gelatin capsules.

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