

- N. B. :** (1) Question No. 1 is **compulsory**.
(2) Attempt any **three** questions from Question Nos. 2 to 5.
(3) Draw **neat labelled** diagrams wherever **necessary**.
(4) **Figures** to the **right** indicate **full** marks.

- (a) Define/state the following (any **five**) :- 5
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| (i) Porosity | (ii) Ear Drops |
| (iii) Diffusion | (iv) Linctus |
| (v) Angle of repose | (vi) Throat paint. |
- (b) Answer the following (any **five**) :- 5
- (i) What is the role of pH adjustment in Dakin's Solution ?
 - (ii) Give storage conditions for aromatic waters.
 - (iii) State the principle of coulter counter method for particle size determination.
 - (iv) Differentiate between syrup and invert syrup.
 - (v) Why Kaolin should be sterilized before its use in pharmaceutical products ?
 - (vi) What are tamper-proof containers and what is their importance ?
2. (a) What is preformulation ? Give the significance of partition coefficient in formulation development. 4
- (b) Discuss preservatives and antioxidants used in liquid oral products. 3
- (c) Discuss in brief the alternate solution method for preparation of aromatic waters. 3
3. (a) Enumerate the quality control tests for liquid oral preparations. 5
- (b) State Noyes-Whitney equation and discuss briefly the factors affecting the rate of dissolution. 3
- (c) Discuss briefly the pharmaceutical applications of complexation. 2
4. (a) With the help of a neat labelled diagram, explain the construction and principle of operation of hammer mill. 4
- (b) Explain size separation based on the principle of sedimentation. 3
- (c) Discuss in brief the Andreason's Pipette method for determination of particle size. 3
5. (a) Enumerate the advantages and disadvantages of plastics as packaging material for liquid products. 4
- (b) State and derive Fick's first law of diffusion. 3
- (c) Write a note on Oral Rehydration preparations. 3
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