



- Notes :
1. All questions are compulsory.
  2. Illustrate your answers wherever necessary with the help of neat sketches.
  3. Diagrams and Chemical equation should be given wherever necessary.

1. Solve **any ten** of the following. **10x2**  
**=20**
  - i) Define controlled drug delivery.
  - ii) What is Ocusert.
  - iii) Define Extended Release
  - iv) Give its characteristics & advantages of ideal polymers.
  - v) Discuss pH activated drug delivery system.
  - vi) Classify rate controlled drug delivery system.
  - vii) What do you mean by proteins.
  - viii) Write note on penetration enhancer.
  - ix) Draw the structure of skin.
  - x) Write application of polymer in formulation of CDDS.
  - xi) What is Bioelectric Medicine.
2. Solve **any five** of the following. **5x7**  
**=35**
  - i) Define Oral-Controlled DDS. Give their advantages & Disadvantages.
  - ii) Describe the rational behind development of CDDS.
  - iii) Define polymers. Explain in brief role of polymer in drug delivery.
  - iv) Briefly Explain Osmotic Pressure-CGDS with neat label diagram.
  - v) Discuss diffusion cell used in TDDS.
  - vi) Write in brief basic component of TDDS.
  - vii) Write note on Sonophoresis.
3. Solve **any two** of following. **10x2**  
**=20**
  - i) Explain physiological properties influencing the design and development of controlled release product.
  - ii) Briefly explain classification of polymers with example.
  - iii) Explain *Invitro* & *In vivo* evaluation parameters of mucoadhesive drug delivery system.

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