

(iv) Explain in details in *vitro-in vivo* correlation.

2. Answer any *eight* questions from the following :

8×5=40

(i) Explain osmotic drug delivery system with diagram. Name one marketed formulation of this class.

(ii) Explain the phenomenon of drug release from a reservoir type microparticle.

(iii) Explain the significance of *in vitro-in vivo* correlation in dissolution study.

(iv) Write a short note on acrylate and methacrylate as drug delivery carriers.

(v) What are the regulatory aspects and specifications used in packing of pharmaceutical products.

(vi) Describe the biodegradable polymers with example and specific application.

(vii) What are the different methods of preparation of polymeric nanoparticle ?

(viii) Write a short note on closures and containers used in packaging.

(ix) Explain different depot formulations on the basis of different mechanism.

(x) Explain the application of hydrophilic polymers in drug delivery.

3. Answer any *ten* questions from the following :
3×10=30

(i) What is smart polymer ? How it is used for controlled drug delivery ?

(ii) What is the difference between micro-emulsion and multiple-emulsion ?

(iii) Differentiate between conventional, sustained and controlled drug delivery system with diagram.

(iv) Explain swellable controlled release system.

(v) Explain the process of Coacervation.

(vi) Discuss the storage conditions of hard and soft gelatin capsule.

(vii) What are implants ? Explain how implants act as a controlled drug delivery system.

(viii) How can a w/o/w emulsion be prepared ? What type of surfactants should be used in such formulation ?

- (ix) How can one characterize a biodegradable microsphere ?
- (x) Arrange the following in ascending order of their HLB values :
- Span 80, Tween 20, Pluronic F68, Soya Lecethin, Polysorbate 80 and Sobbitan 20.
- (xi) What is long acting contraceptive formulation ?
- (xii) What is the role of PVA in control release drug delivery ?