

GUJARAT TECHNOLOGICAL UNIVERSITY
B.Pharm. – SEMESTER -VII– • EXAMINATION – WINTER -2021

Subject Code: : BP704TT**Date:01/12/2021****Subject Name: Novel Drug Delivery System****Time: 10:30 AM TO 01:30 PM****Total Marks: 80****Instructions:**

1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

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| Q.1 | (a) | Explain the terms delayed release, extended release and controlled release. Discuss advantages of controlled release drug delivery systems. | 06 |
| | (b) | Classify controlled release drug delivery systems. Describe matrix systems. | 05 |
| | (c) | Describe the physicochemical properties of drug molecule required for controlled drug delivery system. | 05 |
| Q.2 | (a) | Explain glass transition temperature of polymer. Describe smart polymers with examples. | 06 |
| | (b) | Differentiate between microsphere and microcapsule. Discuss advantages and limitations of microencapsulation. | 05 |
| | (c) | Enlist methods of microencapsulation. Describe spray drying-spray congealing method. | 05 |
| Q.3 | (a) | What is mucosal drug delivery? Describe theories of muco/bio-adhesion. | 06 |
| | (b) | Discuss formulation approaches for buccal drug delivery systems. | 05 |
| | (c) | What is transdermal drug delivery system (TDDS)? Describe matrix formulation approach for TDDS. | 05 |
| Q.4 | (a) | What is implantable drug delivery? Describe Alzet osmotic pump with diagram. | 06 |
| | (b) | Describe the factors affecting permeation of drug through barrier of skin. | 05 |
| | (c) | What is targeted drug delivery? Describe passive and active targeting in detail. | 05 |
| Q.5 | (a) | Explain gastro-retentive drug delivery system (GRDDS). Describe advantages and limitations of GRDDS. | 06 |
| | (b) | Enlist approaches for gastric retention. Discuss high density and raft forming approaches. | 05 |
| | (c) | What are nanoparticles? Describe pharmaceutical applications of nanoparticles. | 05 |
| Q.6 | (a) | Compare and contrast metered dose inhalers and dry powder inhalers for drug delivery. | 06 |
| | (b) | Explain first, second and third- order targeting. Discuss advantages and disadvantages of liposomes as a drug carrier. | 05 |
| | (c) | Explain monoclonal antibodies. Describe their advantages, limitations and applications. | 05 |
| Q.7 | (a) | Name the intraocular barriers to drug permeation. Describe methods to overcome intra ocular barriers of the eye. | 06 |
| | (b) | What are intrauterine devices (IUDs)? Discuss hormone releasing IUDs. | 05 |
| | (c) | What is ophthalmic in situ gel? Describe different type of ocular inserts. | 05 |

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