

Q. P. Code: 22794**Time: 3 Hours****70 marks**

Please check whether you have got right question paper.

N. B. : (1) All questions are compulsory.

(2) Figures to the right indicate full marks.

(3) Draw neat labelled diagram wherever necessary.

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| 1 | a | Explain the leaker test for thermolabile aqueous parenteral formulation. | 2 |
| | b | Removal of pyrogens from parenteral formulation is difficult. Justify. | 2 |
| | c | Attempt any two | 4 |
| | i) | Explain importance of wool fat in ophthalmic ointments. | |
| | ii) | Enlist advantages of ophthalmic gels. | |
| | iii) | Explain the need for addition of preservative in ophthalmic formulations. | |
| | d | Enlist advantages of SR formulations over conventional formulations. | 2 |
| | e | Explain maintenance dose calculations for SR drug delivery systems. | 2 |
| | f | Discuss importance of Arrhenius equation in calculating shelf life and half life of a product. | 3 |
| 2 | a | Discuss nonaqueous vehicles used in parenteral formulations and route of their administration. | 4 |
| | b | Discuss factors limiting ocular bioavailability. | 3 |
| | c | What is oxidative degradation? Suggest methods for its prevention. | 4 |

OR

Discuss degradation of moisture sensitive drugs.

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| 3 | a | Enlist evaluation tests for rubber closures stating significance of each. | 4 |
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OR

State various types of glasses and methods to differentiate between them.

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| | b | Discuss biological properties of drug considered while designing SR dosage forms. | 4 |
| | c | Discuss stability studies as per ICH guidelines. | 3 |

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- 4 a Discuss formulation and processing of suspension type of injectable. 4
- b Discuss evaluation tests for ophthalmic ointments. 3
- c Explain ion exchange controlled drug delivery system. 4

OR

Differentiate between dissolution controlled and diffusion controlled SR systems.

- 5 a Discuss packaging of large volume parenteral. 4
- b Explain evaluation of oral SR formulations. 3
- c Discuss influence of plastic as packaging material on stability of pharmaceuticals. 4
- 6 a Discuss the manufacturing facility for parenteral formulation with the help of suitable layout. 4
- b Explain construction and working of HEPA. 3
- c Enlist various types of contact lenses and discuss any two contact lens care products. 4
