

GUJARAT TECHNOLOGICAL UNIVERSITY
B. Pharm. – SEMESTER – VII • EXAMINATION – SUMMER • 2014

Subject Code: 270003**Date: 07-06-2014****Subject Name: Pharmaceutical Chemistry-IX (Medicinal Chemistry)****Time: 10:30 am - 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.

- Q.1** (a) What are antibiotics and anti-bacterial agents? **06**
Explain the SAR and mechanism of Quinolone as antibacterial agent.
- (b) What is the rationale of using the following drugs in combination **05**
i) Nitroimidazoles and Quinolone ii) Amoxicillin and Clarithromycin
- (c) What are beta-lactam antibiotics? **05**
Give the nomenclature of different types of rings related to beta-lactam with examples. Enumerate the advantages of cephalosporin over penicillin antibiotic.
- Q.2** (a) Explain in detail about chemically relevant degradation of penicillin in acidic and basic condition. **06**
- (b) What are cephalosporin antibiotics? Discuss its SAR in detail. **05**
- (c) Write a note on i) Beta-lactamase inhibitor ii) Carbapenems **05**
- Q.3** (a) What are aminoglycoside antibiotics? **06**
Explain its chemistry, mechanism of action and SAR.
- (b) Why azithromycin is better macrolide as compared to erythromycin? **05**
Discuss intramolecular ketal formation in erythromycin under acidic condition and its importance in degradation of erythromycin.
- (c) Give synthesis of chloramphenicol and ciprofloxacin. **05**
- Q.4** (a) Enumerate the diseases caused by *Mycobacterium*. What is XDR-TB? **06**
Explain about second line treatment of TB.
- (b) Write a note on antifungal agents. **05**
- (c) Give synthesis of Isoniazide and Ketoconazole. **05**
- Q.5** (a) Classify different anti-protozoal agents. **06**
Explain in detail about SAR of quinoline as antimalarial agents.
- (b) Write a note on antidiabetic agents. **05**
- (c) What is the difference between malaria and dengue? **05**
Give the synthesis of chloroquine and albendazole.
- Q.6** (a) Why viral infections are difficult to treat? Give different molecular targets for anti-HIV agents and discuss NNRTIs in detail. **06**
- (b) What are antineoplastic agents? Classify in detail with example. **05**
- (c) Write a note on antimetabolite as anticancer agent. **05**
Give synthesis of methotrexate.
- Q.7** (a) What are steroids? Explain nomenclature and stereochemistry of steroid in detail. **06**
- (b) Give SAR of adrenocorticoids. **05**
- (c) Write a note on Immunomodulator OR Antithyroid drugs **05**
