

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

**Subject Code: 270003****Date: 29-11-2014****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) Explain the following terms briefly giving suitable example: Antibiotics, Chemotherapeutic agent, Chemotherapeutic Index, Broad Spectrum antibiotics, Super Infection and Synergistic effect **06**
- (b) Chemically classify Sulphonamide and Discuss its SAR. **05**
- (c) Give rationale behind combining specific drugs in Co-Trimoxazole. Give synthesis and uses of Sulphacetamide **05**
- Q.2** (a) What are Fluoroquinolones? Classify them. Give the mechanism of action of Fluoroquinolones and give synthesis of Ofloxacin **06**
- (b) Classify  $\beta$ -lactam antibiotics and discuss application of Clavulanic acid **05**
- (c) Discuss degradation of Penicillin and write short note on Penicillinase-resistant Penicillins. **05**
- Q.3** (a) Explain briefly following terms; Crystalluria, Grey Baby Syndrome and Fanconi Like syndrome. **06**
- (b) Give source of any two broad spectrum antibiotics. Write short note on stereochemistry and SAR of Tetracycline. **05**
- (c) What are common chemical characteristics of Macrolide antibiotics? How to overcome formulation related problems of erythromycin? Discuss advantage of Clarithromycin and Azithromycin over erythromycin. **05**
- Q.4** (a) Name causative organism of Tuberculosis. Classify anti Tubercular agents. Write note on antitubercular antibiotics and give synthesis of Ethambutol. **06**
- (b) Classify Antifungal agents, write short note on antifungal Antibiotics and Give synthesis of Ketoconazole **05**
- (c) Name diseases caused by protozoal infection. Discuss sexual phase of malarial parasite life cycle. How could it be prevented and Chemically classify antimalarial drugs. **05**
- Q.5** (a) What are unique characteristics of virus? Classify antiviral agents based on site of action, and write short note on Anti-HIV agents **06**
- (b) Explain specific characteristics of cancer cell. Classify anti neoplastic agents and Give synthesis of Thiotepa. **05**
- (c) Discuss mechanism of alkylating agents, Explain bioactivation and cyclophosphamide and give synthesis of Methotrexate **05**
- Q.6** (a) Differentiate types of diabetes. Classify antidiabetic agents and write note on Insulin preparation **06**
- (b) Discuss synthesis, storage and release of Thyroid Hormone. Give synthesis of Methimazole **05**
- (c) Classify Adrenocorticoids, and discuss Pharmacological actions of Glucocorticoids. **05**

- Q. 7**
- (a) Discuss numbering, nomenclature and stereochemistry of steroids. **06**
  - (b) Enumerate major therapeutic classes of steroids giving at least one example in each class. Write short note on Oral contraceptives **05**
  - (c) Write short note on immunomodulators **OR** Give synthesis and category of Tobutamide and albendazole. **05**

\*\*\*\*\*