

Elaborate the pharmaceutical applications of prodrug. 1+5+4

3. What is drug design? Discuss various approaches used in drug design. Write in details about the physicochemical parameters used in QSAR studies. 2+3+5

**III. Short answers (Answer seven out of nine questions) 5x7=35**

1. Discuss in brief about the drugs used in the treatment of helminthiasis. 5
2. Write in brief about the life cycle of malaria parasite. Mention the synthetic procedure for the preparation of pamaquine. 3+2
3. Classify antiviral drugs. Write the synthesis and mechanism of action of acyclovir. 1+4
4. Elaborate the synthetic method of preparation and various combinations of trimethoprim. 5
5. Discuss the mechanism of action and SAR of penicillins. 2+3
6. Describe the synthetic preparation and mechanism of action of chloramphenicol. 3+2
7. Write in details about chemistry and mechanism of action of macrolide antibiotics. 3+2
8. Describe synthesis and mechanism of action of Ciprofloxacin. 3+2
9. Write a short note on synthetic antifungal agents. 5

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**2023/EVEN/13/38/BP-601/012**

**B Pharm Even Semester Examination,  
September, 2023**

**PHARMACEUTICAL SCIENCES**

**(6th Semester)**

**Course No: BP-601T**

(Medicinal Chemistry-III- Theory)

FM: 75

Time: 3 Hours

*The figures in the right margin indicate full marks for the question*

**I. A. Multiple Choice questions 1x10=10**

1. Benzopyridine is the structural scaffold of
  - i) Ciprofloxacin
  - ii) Chloroquine
  - iii) Isoniazid
  - iv) Proguanil
2. In presence of acylase enzyme, the cephalosporin is often degraded into-
  - i) Penicillamine
  - ii) Desacetylcephalosporin
  - iii) 6-Aminopenicillanic acid
  - iv) 7-Aminocephalosporanic acid
3. Which of the following drug is not an example of prodrug?
  - i) Proguanil
  - ii) Isoniazid
  - iii) Acyclovir
  - iv) Chloramphenicol

Turn Over

4. The aminoglycoside antibiotics don't have
  - i) A large lactone ring
  - ii) Amino sugar moiety
  - iii) Aminocyclitol moiety
  - iv) A hydroxyl group
5. Example of a mutual prodrug is
  - i) Bacampicillin
  - ii) Benorylate
  - iii) Chloramphenicol palmitate
  - iv) Hetacillin
6. Which heterocyclic ring is present in the chemical structure of penicillin?
 

i) Thiazolidine	ii) Pyrrolidine
iii) Pyrazolidine	iv) Thiazole
7. Ofloxacin contains a
  - i) Isoquinoline ring
  - ii) Quinolone ring
  - iii) Spiro-furanone ring
  - iv) Oxazoline ring
8. Which of the following approaches is considered under the 'Ligand based drug designing'?
  - i) Molecular docking
  - ii) QSAR Modeling

- iii) Pharmacophore Modeling
  - iv) Both 'ii' and 'iii'
9. Which of the following drugs is used for the treatment of river blindness?
  - i) Rifampin
  - ii) Pyrizinamide
  - iii) Diethyl carbamazine
  - iv) Isoniazid
10. Hammett constant is measured for
  - i) Meta-substituted compounds
  - ii) Para-substituted compounds
  - iii) Ortho-substituted compounds
  - iv) Meta and para-substituted compounds

**I. B. Objective type 2x5=10**

1. Outline the synthesis of the following drugs 2x5
  - a) Dapsone
  - b) Diethylcarbamazine citrate
  - c) Nitrofurantoin
  - d) Para amino salicylic acid
  - e) Sulfamethoxazole

**II. Long answers (Answer two out of three questions) 10x2=20**

1. Write in details about chemistry, classification, SAR and mechanism of action of tetracyclines. 2+3+3+2
2. Define prodrug. Discuss in details about the classification of prodrugs with proper examples.