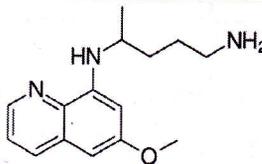


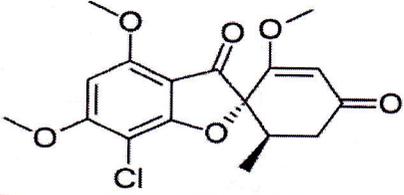
17/04/25

Sem - VI

Time: 3 Hours

Total Marks: 75

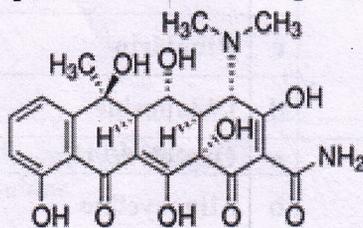
Q.I	Answer the following Multiple Choice Questions. Select the most appropriate option for each statement.	20M
	Questions	Options
1	For Chloramphenicol, the _____ isomer is significantly active	a D-threo b L-threo c D-erythro d L-erythro
2	'Drug + carrier' is known as _____	a prodrug of prodrug b tripartite prodrug c bipartite prodrug d bioprecursor prodrug
3	The correct stereochemistry of quinine is _____	a 3S 4R 8S 9R b 3R 4S 8S 9S c 3R 4S 8R 9S d 3R 4S 8S 9R
4	The following drug belongs to the class _____ 	a 4-Aminoquinolines b 8-Aminoquinolines c 9-Aminoacridines d Quinoline methanols
5	Zidovudine is _____	a Guanine analogue b thymine analogue c cytosine analogue d adenine analogue
6	Diethylcarbamazine contains the _____ ring	a benzimidazole b thiophene c furan d piperazine
7	Sulfonamides inhibit the enzyme _____	a dihydrofolate reductase b alanine racemase c dihydropteroate synthase d DNA polymerase

8	In rapid acetylators Isoniazid is given along with	a	Pyrazinamide	
		b	Rifampicin	
		c	Cycloserine	
		d	PAS	
9	Identify the least phototoxic fluoroquinolone	a	Norfloxacin	
		b	Lomefloxacin	
		c	Sparfloxacin	
		d	Ciprofloxacin	
10	Chemically tetracycline is a derivative of	a	A large macrocyclic lactone ring	
		b	6-Amino penicillanic acid (6-APA)	
		c	Octahydronaphthalene	
		d	7-Amino cephalosporanic acid (6-APA)	
11	Identify the following drug: 	a	Tolnaftate	
		b	Griseofulvin	
		c	Miconazole	
		d	Amphotericin B	
12	What crucial feature of a penicillin is involved in its mechanism of action?	a	Carboxylic acid	
		b	β -lactam ring	
		c	Acyl side chain	
		d	Thiazolidine ring	
13	<i>S.orchidaceus</i> is biological source for	a	Streptomycin	
		b	Rifampicin	
		c	Cycloserine	
		d	Azithromycin	
14	Which of the following is a second generation cephalosporin	a	Cephalexin	
		b	Cefotaxime	
		c	Cefuroxime	
		d	Cefepime	

Q.II Attempt any Two out of given Three questions.

20M

1A With respect to the structures given below, answer the following questions: 4M

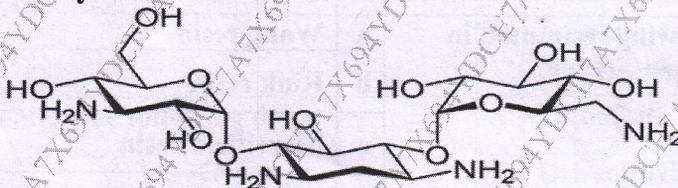


- Identify the generic name of the drug.
- Classify the drug as per duration of action
- Draw the structure of any salt form of the drug.
- Write the effect when amide is replaced by nitrile.

1B Give the chemical classification of antimalarial drugs giving one example (with structure) from each class 4M

1C Give the generic name and structure of β -lactamase inhibitor? 2M

2A Identify the class and write three structural features of the same 4M



2B Depict the activation of proguanil. Name the enzyme inhibited. 4M

2C Write the structure of Clindamycin. Mention its mechanism of action. 2M

3A State if the following statement if True/ False. Justify the same and correct if false 4M

- Electron donating group at the α -carbon atom in the side chain of penicillin, increases the spectrum of activity
- Presence of $\text{CH}_2\text{OCOCH}_3$ at C-3 position in cephalosporin, increases the stability of the drug

3B Explain the following terms with suitable examples: 4M

- Mutual prodrug
- Tripartite prodrug

3C Give the structure and generic name for the following: 2M

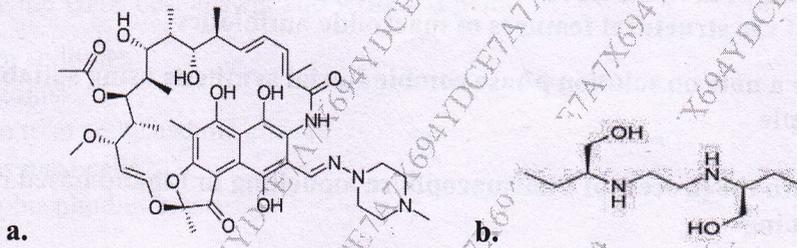
- Hydrophilic analog of Artemisinin
- Antimalarial agent that inhibits mitochondrial electron transport system in plasmodia

Q.III Attempt any Seven out of given Nine questions.

35M

1. Answer the following with respect to structures given

5M

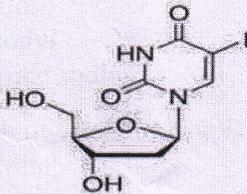


- i. Write names of a and b
- ii. Write mechanism of action of a
- iii. Write rationale for combination of a and b.

2. a. Acyclovir acts as a prodrug. Justify whether true or false. **3M**
 b. Write mechanism of action of protease inhibitors. **2M**

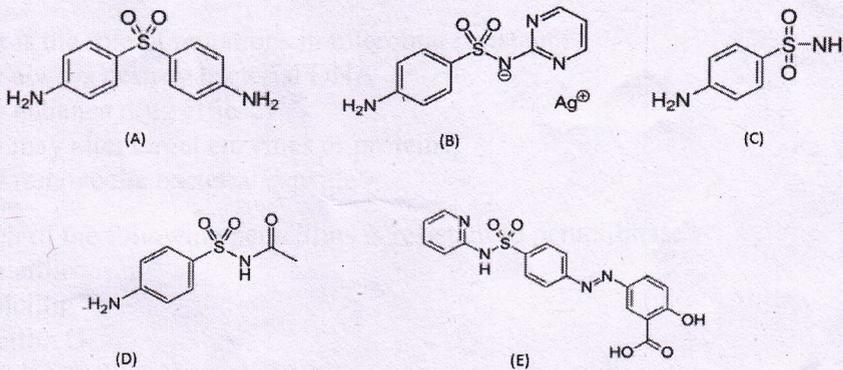
3. A. Write synthesis of ciprofloxacin with the help of suitable reagents. **3M**
 B. Write generic name and structure of antibacterial drug consisting of nitrofuran ring. **2M**

4. a. Write a note on polyene antifungal antibiotics. **3M**
 b. Identify the following drug and write mechanism of action. **2M**



5. Based on the structures below answer the following questions:

5M



- Identify and give the generic name for:
 - i. sulfonamide used for burn therapy
 - ii. sulfonamide prodrug used for ulcerative colitis
 - iii. sulfonamide used for ophthalmic infections
 - iv. drug used in the treatment of leprosy
 - v. Modify structure (C) to get a sulfonamide with pK_a between 5-7

6. a. Discuss the mechanism and therapeutic use of Metronidazole. 3M
b. Give the name and structure of 4th generation cephalosporin. 2M
7. a. Outline the synthetic route for Diethylcarbamazine citrate with all necessary reactants and reaction conditions. 3M
b. List the structural features of macrolide antibiotics 2M
8. Write a note on solution phase combinatorial synthesis using suitable example 5M
9. Explain the process of Pharmacophore modelling in Ligand based drug designing 5M
