



**NAVRACHANA  
UNIVERSITY**  
a UGC recognized University

**School:** School of Science  
**Program:** B. Sc. in Chemistry  
**Year:** 3<sup>rd</sup> **Semester:** 5<sup>th</sup>  
**Examination:** End Semester Examination  
**Examination year:** December - 2021

**Course Code:** SE302 **Course Name:** MEDICINAL CHEMISTRY-I  
**Date:** 03/12/2021  
**Time:** 11:30 am to 1:30 pm

**Total Marks:** 40  
**Total Pages:** 2

**Instructions:**

- Write each answer on a new page.
- Use of a calculator is not required.
- \* COs=Course Outcome mapping. # BTL=Bloom's Taxonomy Level mapping

Q. No.	Details	Marks	COs*	BTL#
Q.1	Fill in the blanks (Write complete statements in answer book)	6		
	1. Replacement or modification of a functional group with other groups having similar properties is known as ..... replacement.			
	2. 'Concept of Ring Equivalents' was suggested by .....		CO1,	BT1,
	3. Extra substances added to drug to form tablets are called as .....		CO2,	BT2,
	4. Amount of drug available in the body for action is known as .....		CO3	BT3
	5. Acidic drug binds to ..... present in blood.			
	6. An agent that activates a receptor to produce an effect is known as .....			
Q.2	Choose the most appropriate answer	4		
	A. The order of stains in Gram-staining procedure is			
	a) Crystal violet, Iodine solution, Alcohol, Saffranine			
	b) Iodine solution, Crystal Violet, Saffranine, Alcohol			
	c) Alcohol, Crystal Violet, Iodine solution, Saffranine			
	d) Crystal Violet, Alcohol, Saffranine, Iodine solution			BT1,
			CO3,	BT2,
			CO4	BT3,
	B. Which of the following are considered to be broad spectrum antibiotics?			BT4
	I. Tetracyclines			
	II. Chloramphenicol			
	III. penicillin			
	IV. Isoniazid			
	a) I & II			b) II & III
	c) I, II & III			d) II, III, IV



C. Drug of choice for rickettsia is .....

- a) Erythromycin
- b) Tetracyclines
- c) Chloramphenicol
- d) Penicillin

D. The cell walls of Gram-positive bacteria contain two modified sugar, viz. N-acetylglucosamine (NAG) and N-acetylmuramic acid (NAM). They are covalently linked by.....

- a)  $\alpha$ -1,4-glycosidic bond
- b)  $\beta$ -1,6-glycosidic bond
- c)  $\alpha$ -1,6-glycosidic bond
- d)  $\beta$ -1,4-glycosidic bond

**Q.3** Match the following

2

- |                  |                    |
|------------------|--------------------|
| a) Sulpha drug   | i. Doxycycline     |
| b) Penicillin    | ii. Cefixime       |
| c) Cephalosporin | iii. Sulphadiazine |
| d) tetracycline  | iv. Amoxicillin    |

CO1, BT1,  
CO2, BT2,  
CO3, BT3  
CO4

**Q.4** Answer the following

18

- a) Explain concept of pro-drug with suitable diagram and its advantages.
- b) Explain factors affecting absorption of drug.
- c) Explain why drugs show different effects on different people.
- d) Illustrate the effect of pH on tetracyclines.
- e) Describe the various types of spectrum of antibiotics.
- f) Explain the factor for antibiotic resistance

CO1, BT1,  
CO2, BT2,  
CO3, BT3  
CO4

**Q.5** Explain the following in detail (**any one**)

5

- (a) Explain various modes of administration of drug to a body.
- (b) Explain various modes of drug and receptor interactions with suitable diagrams.

CO1, BT1,  
CO2, BT2,  
CO3, BT3

**Q.6** Explain the following in detail (**any one**)

5

- (a) Antibiotics inhibits the ribosome function. Justify
- (b) Explain how penicillin or cephalosporin inhibit bacteria with mechanism.

CO2, BT1,  
CO3, BT2,  
CO4, BT3

\*\*\*\*\*End of Question Paper\*\*\*\*\*