

Second Midterm Exam
Academic Year 1446- First Semester

Exam Date (Hijri): ١٤٤٦/٠٤/جمادى الأولى	Course Code: 463 MBI
Exam Date (Gregorian): ٢٠٢٤/١١/٠٦	Course Name: Antibiotics
Exam Time: 1 - 2 PM	

Student's Name		اسم الطالب
ID number		الرقم الجامعي
Section No. 4569	٤٥٦٩	رقم الشعبة
Classroom No. 1 B 11 B. 5	٥ ١١ م	رقم قاعة الاختبار
Instructor Name Dr. Naiyf S Alharbi	د. نايف بن سلطان الحربي	اسم أستاذ المقرر
Serial Number		الرقم التسلسلي

Instructions:

- 1- Your Exam consists of 1 PAGES and 1 ANSWER SHEET.
- 2- Keep your mobile and smart watch out of the classroom

This section is ONLY for instructor

#	Course Learning Outcome	Question (s) covered	Points	Actual Point		
1. Knowledge	CLO 1-1 : Initial concepts of antibiotics	Q1 (3)	1	1		
	CLO 1-2 : Comprehension of extracting and measuring the rate of reaction of antibiotics and antibiotic biosynthesis	Q2 (6,7)	0.5+0.5	1		
	CLO 1-3 : How to use antibiotic treatment and methods of use in the prevention	Q2 (3, 8, 10, 12, 13)	0.5+0.5+0.5+0.5+0.5	2.5		
	CLO 1-4: Learn how to detect the activity of antibiotics	-	-	0		
2. Cognitive Skills	CLO 2-1 : Discuss where antibiotics come from.	Q2 (2, 4, 5)	0.5+0.5+0.5	1.5		
	CLO 2-2 : Discuss the causes of the development of antibiotic resistance	Q2 (2, 11)	0.5+0.5	1		
	CLO 2-3: How to use antibiotics in the treatment and side effects.	Q1 (1, 2) Q2 (9,14)	1+1+ 0.5+0.5	3		

FINAL
Score

10

Q1: Mention and discuss as required:

(3 Marks)

1- List the four side effects (allergies) of penicillin therapy?

2- Mention the exclusive tests that allow detecting the first signs of antibiotic therapy monitoring?

3- Many antibiotics inhibit the synthesis of proteins in bacteria without affecting the synthesis of proteins in human cells. What is the reason for this selectivity?

Q2: Put a check (✓) mark if the statement is correct and (×) mark if incorrect.

(7 Marks)

1	Fungal membranes contain steroid alcohols while bacteria do not have them (except for some) which are targeted by some antibiotics.	
2	Quinolones antibiotics bind to the covalent bond between DNA and Gyrase and thus affect the process of DNA replication.	
3	The peptidoglycan layer is the active and important site of action for antibiotics that act on cellular membranes.	
4	Tetracyclines are a family of antibiotics that inhibit protein synthesis by binding to the 50S subunit.	
5	Rifampin is an antibiotic used to treat tuberculosis along with other antibiotics to prevent meningitis.	
6	Aminoglycosides are some of the most important antibiotics that affect the 30S subunit.	
7	Sulfonamides interfere and disrupt folate metabolism in the bacterial cell resulting from competition for the binding site and blocking the synthesis of tetrahydrofolate.	
8	Autolytic enzymes (murein hydrolases) are active in cells treated with the antibiotic Trimethoprim.	
9	In many cases, the introduction of two or more antibiotics is necessary as it acts on multiple mechanisms.	
10	The β -lactamase enzyme plays a role in inhibiting cross-links during polymerization to create peptidoglycan.	
11	The cell wall acts as a diffusion barrier for water, ions, nutrients, and transport systems.	
12	One of the most important mechanisms of action of the aminoglycoside group is the inhibition of the initiation compound.	
13	Chloramphenicol is a β -lactam because it is a bactericidal agent and inhibits the cross-linking of peptidoglycan.	
14	Peptidoglycan is inhibited in the developing bacterial cell in the second phase.	