College of Science كليه العلوم

Department of Botany & Microbiology قسم النبات والاحياء الدقيقه

Second Midterm Exam
Academic Year 1447 Hijri- First Semester

Exam Information معلومات الامتحان			
Course Name	Antibiotics	مضادات حيوية	اسم المقرر
Course Code	463 MBIO	463 حدق	رمز المقرر
Exam Date	2025-11-12	1447-05-22	تاريخ الامتحان
Exam Time	01 00 PM		وقت الامتحان
Exam Duration	2 hours	ساعتان	مدة الامتحان
Classroom No.	1 B11 B. 5	١ب ١١ م ٥	رقم قاعة الاختبار
Instructor Name	Dr. Naiyf S Alharbi	د. نايف بن سلطان الحربي	اسم أستاذ المقرر

Student Information معلومات الطالب		
Student's Name		اسم الطالب
ID number		الرقم الجامعي
Section No.	4569	رقم الشعبة
Serial Number		الرقم التسلسلي

General Instructions:

- Your Exam consists of 1 PAGES (Except this page). صفحات الامتحان ١ صفحة. (باستثناء هذه الورقة).
- Keep your mobile and smart watch out of the classroom. يجب إبقاء الهواتف والساعات الذكية خارج قاعة الامتحان.

هذا الجزء خاص بأستاذ المادة

This section is ONLY for instructor

#	Course Learning Outcomes (CLOs)	Related Question (s)	Points	Points earned	Final	Actual Point
1	**CLO 1:** Initial concepts of antibiotics	0	0	0		
2	**CLO 2:** Comprehension of extracting and measuring the rate of reaction of antibiotics and antibiotic biosynthesis	**Q3** (2, 4)	0.5+0.5	1		
3	**CLO 3:** How to use antibiotic treatment and methods of use in the prevention	**Q1** (1, 2)	1.5+1	2.5		
4	**CLO 4:** Learn how to detect the activity of antibiotics	**Q1** (3) **Q2** (1, 2, 4, 5, 6)	1+0.5+0.5+0.5+0.5+0.5+0.5	3.5		10
5	**CLO 5:** Discuss where antibiotics come from.	0	0	0		
6	**CLO 6:** Discuss the causes of the development of antibiotic resistance	0	0	0		
7	**CLO 7:** How to use antibiotics in the treatment and side effects.	**Q1** (4) **Q2** (3) **Q3** (1, 3, 5, 6)	0.5+0.5+0.5+0.5+0.5+0.5	3		

EXAM COVER BAGE

Q1: Mention and discuss as required: (4 Marks)

1- Discuss the importance of antibiotic synergy in combating resistant bacterial infections. (1.5 Mark)

2- What are the methods of giving antibiotics to patients? (1 Mark)

3- Describe the role of physicochemical and pharmacological tests in assessing the safety and efficacy of new antibiotics. (1 Mark)

4- What are the symptoms associated with the common gastrointestinal upset (GI Upset) related to antibiotic treatment? (0.5 Mark)

***Q2*: Put a check (√) mark if the statement is correct and (×) mark if incorrect. (3 Marks)**		
1	Carbapenems are inhibits MurA enzyme, blocks first stage of peptidoglycan synthesis	
2	Macrolides inhibit peptide chain elongation by binding to the 50S subunit.	
3	Itching is swelling of lips, eyelids, or face, which can lead to dangerous airway obstruction.	
4	Pharmacological tests evaluate enzyme-related reactions in microbes.	
5	2nd Stage of cell wall synthesis. precursors bind to a lipid carrier, transported to the outer membrane surface.	
6	Aminoglycosides act by blocking tRNA attachment to the ribosome.	

***Q3*: Select the correct answer for the following Multiple-Choice Questions. (3 Marks)**			
1. Which of the following pairs can show antagonism when combined?			
A. Ampicillin and gentamicin	**B.** Ampicillin and cephalexin	**C.** Quinolone and tetracycline	**D.** Penicillin and streptomycin
2. What is the next step after collecting environmental samples in antibiotic discovery?			
A. Microorganism isolation	**B.** Chemical extraction	**C.** Heat processing	**D.** Packaging
3. What is one reason antibiotic synergy is desirable?			
A. Narrow the spectrum effect	**B.** Allow the evolutionary selection of resistant strains.	**C.** Shorten the course of therapy.	**D.** Leads to higher dosage.
4. What type of chemical modification helped solve the instability of penicillins in acidic environments?			
A. Use of bacteriostatic agents	**B.** Semi-synthetic derivatization	**C.** Temperature control	**D.** Color change reactions
5. Which enzyme inserts negative supercoils into DNA and releases positive supercoils, thus facilitating DNA replication and transcription?			
A. Topoisomerase IV	**B.** RNA polymerase	**C.** Helicase	**D.** DNA gyrase
6. Which antibiotic group inhibits RNA polymerase, thus preventing mRNA synthesis?			
A. Quinolones	**B.** Metronidazoles	**C.** Rifampicins	**D.** Nitrofurans

With best wishes
Dr. Naiyf S. Alharbi