Name:

Enrolment No:

UPES

End Semester Examination May – 2024

Course : Antimicrobial Drug Resistance and Drug Development
Semester : VI
Program : Integrated B.Sc.-MSc Microbiology
Duration : 3 Hours
Course Code : HSMB3025P **Max. Marks: 100**
Instructions : All questions are compulsory

S. No.	Section A Short answer questions/ MCQ/T&F (20Q x 1.5M = 30 Marks)	Marks	COs
Q1	State full form of ESBL.	**1.5**	**CO1**
Q2	Define MIC.	**1.5**	**CO1**
Q3	State what are CRE's.	**1.5**	**CO1**
Q4	State names of regulatory authorities to grant permission for investigation of new drugs in India.	**1.5**	**CO2**
Q5	Define Docking.	**1.5**	**CO3**
Q6	Mention the four main types of receptors.	**1.5**	**CO2**
Q7	Identify the likely combinations that may contribute to the development of a super-infection: a) long-term use of narrow-spectrum antimicrobials b) long-term use of broad-spectrum antimicrobials c) short-term use of narrow-spectrum antimicrobials d) short-term use of broad-spectrum antimicrobials	**1.5**	**CO1**
Q8	The following term refers to the ability of an antimicrobial drug to harm the target microbe without harming the host: a) mode of action b) therapeutic level c) spectrum of activity d) selective toxicity	**1.5**	**CO2**
Q9	Which of the following is not a type of β-lactam antimicrobial? a) Penicillins b) Glycopeptides c) Cephalosporins d) Monobactams	**1.5**	**CO1**

Q10	One of the following does not bind to the 50S ribosomal subunit: a) Tetracyclines b) Lincosamides c) Macrolides d) Chloramphenicol	**1.5**	**CO2**
Q11	State which of the following antimicrobials inhibits the activity of DNA gyrase? a) Polymyxin B b) Clindamycin c) Nalidixic acid d) Rifampin	**1.5**	**CO2**
Q12	_____ is not an appropriate target for antifungal drugs? a) ergosterol b) chitin c) cholesterol d) β(1→3) glucan	**1.5**	**CO2**
Q13	One of the following resistance mechanisms describes the function of β-lactamase? a) Efflux pump b) Target mimicry c) Drug inactivation d) Target overproduction	**1.5**	**CO3**
Q14	The following technique cannot be used to determine the minimum inhibitory concentration of an antimicrobial drug against a particular microbe: a) Etest b) microbroth dilution test c) Kirby-Bauer disk diffusion test d) Microbroth dilution test	**1.5**	**CO3**
Q15	The following has yielded compounds with the most antimicrobial activity? a) water b) air c) volcanoes d) soil	**1.5**	**CO2**
Q16	Comment on the below statement: “If you are ‘colonized’ with bacteria, does that mean you have an infection?”	**1.5**	**CO1**
Q17	State True or False: “Do not take antibiotics for viral infections”	**1.5**	**CO1**
Q18	The father of Chemotherapy was _____.	**1.5**	**CO1**

Q19	Define Systemic toxicity and give example of an antimicrobial drug which can cause systemic toxicity.	**1.5**	**CO2**
Q20	State the core purpose of Antibiotic Stewardship.	**1.5**	**CO3**
Section B (4Qx5M=20 Marks)			
Q1	Explain the concept of natural and acquired resistance with examples.	**5**	**CO1**
Q2	Discuss the concept of One Health.	**5**	**CO3**
Q3	Describe the different ways for lead identification of drugs.	**5**	**CO2**
Q4	State the purpose of CADD. Explain the difference between ligand based drug-design and structure based design.	**5**	**CO3**
Section C (2Qx15M=30 Marks)			
Q1	Discuss the steps involved during development of new drug.	**15**	**CO3**
Q2	Describe in details different methods of antimicrobial susceptibility testing.	**15**	**CO1**
Section D (2Qx10M=20 Marks)			
Q1	Explain various factors for rising incidences of global AMR.	**10**	**CO1**
Q2	Describe the characetristics of an ideal drug candidate.	**10**	**CO2**