

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATIONS- 2026

B. Tech.-IV Semester (Biotechnology)

COURSE CODE (CREDITS): 25B11BT412 (03)

MAX. MARKS: 25

COURSE NAME: Microbiology

COURSE INSTRUCTORS: Ashok Kumar Nadda

MAX. TIME: 1.5 Hours

Note: (a) All questions are compulsory.

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Q.No	Question	COs	Marks
<b>Section I</b>			
Q1	(a) What are Biguanides? Give examples.	CO I	0.5
	(b) Give the example of antibiotics that acts on 50S and 30S ribosomal subunits to inhibit protein synthesis?	COIII	0.5
	(c) What is the principle of moist heat sterilization? Differentiate between dry heat and moist heat.	COIII	0.5
	d) How halogens act as antimicrobial agents? Give examples.	COII	0.5
	(e) Name the two diseases and causative agents associated with contaminated food and water.	COII	0.5
<b>Section II</b>			
Q2	If a bacterium develops a mutation in its ribosome. How would this affect antibiotics targeting protein synthesis?	COI	2.5
Q3	Name the antimicrobial agent that target DNA replication. Why these are often more toxic than those targeting the cell wall?	COII	2.5
Q4	Compare UV radiation and ionizing radiation and which is more effective and why? Why is one used more commonly despite being less powerful?	COII	2.5

Q 6	Alcohol is widely used as a disinfectant, yet it cannot kill spores. What does this suggest about its mechanism of action?	COIII	2.5
Q 7	Give a brief account of the pathogenesis of cholera, causative agent, including toxin production and its effect on the human intestine.	COIV	2.5
<b>Section III</b>			
Q 8	How would antibiotic sensitivity testing methods need to evolve to keep up with rapidly emerging antibiotic resistance? Why antibiotic sensitivity testing is essential in preventing antibiotic resistance?	COIII	5
Q 9	With the help of a suitable diagram explain the life cycle of <i>Plasmodium falciparum</i> in detail and analyze how different stages contribute to disease symptoms in humans. What are the various preventive measure used to control the malaria during rainy seasons.	COIV	5
<b>Total marks</b>			<b>25</b>