

Q1A	Write a concise note on the mechanism of translation in protein synthesis.	7 Marks
Q1B	Discuss the major categories of chemical mutagens and explain how they alter or damage the genetic material.	7 Marks
OR		
Q1A	Enumerate the various kinds of point mutations and illustrate each type with suitable examples.	7 Marks
Q1B	Describe in detail the process of bacterial conjugation and explain its significance in genetic exchange.	7 Marks
OR		
Q2A	Write a brief note on Introduction of clone into Host and its methods.	7 Marks
Q2B	Explain Somatropin as a drug produced by recombinant DNA technology.	7 Marks
OR		
Q2A	What are different methods for selection and screening of clone? Explain them in detail	7 Marks
Q2B	How monoclonal antibody was produced before recombinant technology was discovered? What were the problems faced at that time?	7 Marks
OR		
Q3A	Describe the primary and secondary defense mechanisms of the human body with suitable examples of physical, chemical, and cellular barriers.	7 Marks
Q3B	Write short notes on the following: a) Oral polio vaccine b) Rabies vaccine	7 Marks
OR		
Q3A	Discuss the differences between innate and acquired immunity. Explain the various forms of acquired immunity with examples.	7 Marks
Q3B	Describe the principle, procedure, and diagnostic importance of Widal test.	7 Marks
OR		
Q4A	What were the early challenges for antibiotic production? Explain the methods used for antibiotic standardization	7 Marks
Q4B	Write a brief note on penicillin production.	7 Marks
OR		
Q4A	Write a brief note on modern antibiotic production.	7 Marks
Q4B	Explain the production of streptomycin in detail.	7 Marks

Q5	Answer the following questions (Any Seven)	14 Marks
I	Explain the significance of mutations in promoting evolution and maintaining genetic variation.	2 Marks
II	Define transduction in bacterial genetics and state its role in gene transfer.	2 Marks
III	What is a frameshift mutation, and in what way does it differ from a point mutation?	2 Marks
IV	What is the mechanism of action of Activase?	2 Marks
V	Which two chemicals are used for transformation of clone in <i>E. coli</i> by chemical method?	2 Marks
VI	Give names of any two chemical methods used to transform clone in Mammalian cell line.	2 Marks
VII	What are the main components of the primary line of defense?	2 Marks
VIII	Explain the role of Macrophages in innate immunity	2 Marks
IX	Mention the storage temperature and validity period of BCG vaccine.	2 Marks
X	What is the importance of Vit B2 and Vit B12?	2 Marks
XI	What are the uses of citric acid in pharmaceutical industry?	2 Marks
XII	Name two types of natural penicillin.	2 Marks

BEST OF LUCK