2211E798

Candidate's Seat No :_____

M.Sc Sem-3 Examination

503

Pharma Science (EA)

November-2024

Time : 2-30 Hours] **[Max. Marks : 70**

Q1A	List out types of point mutation and explain with example.	7 Marks
Q1B	Write a note on protein synthesis process.	7 Marks
	OR	
Q1A	Explain the mechanism of transformation in *B. subtilis*.	7 Marks
Q1B	Describe the different types of mutagenic agents (chemical, physical, and biological) and their effects on genetic material.	7 Marks
Q2A	List out various ways to introduce the clone into host cell. Explain transformation in detail.	7 Marks
Q2B	Explain Humulin as an example of recombinant DNA technology.	7 Marks
	OR	
Q2A	Explain transduction and protoplast fusion in detail.	7 Marks
Q2B	Explain Monoclonal antibody as an example of recombinant DNA technology.	7 Marks
Q3A	Discuss any three diagnostic tests based on immunological principles.	7 Marks
Q3B	Explain the role of sera in immunology. How are sera used for both diagnostic and therapeutic purposes, and what are the challenges in their preparation and use?	7 Marks
	OR	
Q3A	Explain the primary and secondary defence mechanisms of the immune system.	7 Marks
Q3B	Discuss the principles of immunology, focusing on the interactions between antigens and antibodies. How are antigen-antibody reactions used in diagnostic applications?	7 Marks
Q4A	Explain Methods Used for Antibiotic Standardization in detail.	7 Marks
Q4B	Explain processing and storage of whole human blood.	7 Marks
	OR	
Q4A	Explain detailed production of Penicillin.	7 Marks
Q4B	What is the standard protocol for collection of blood? List out the ideal requirements for it.	7 Marks
Q5	**Answer the following questions (Any Seven)**	**14 Marks**
I	Define frame-shift mutation and explain how it differs from a point mutation.	2 Marks
II	What is TNRE, and what role does it play in genetic disorders?	2 Marks
III	Why are mutations important for evolution and genetic diversity?	2 Marks
IV	Before the advent of recombinant technology, how Human Growth	2 Marks

(P.T.O)

	Hormone (HGH) was extracted? What were the issues faced while using it?	
V	As a hypothetical scenario, a researcher was working on a plant named *Cassia fistula*. His aim was to crystalize a protein named Deoxy-xylulose Phosphate synthase (DXPS) from the plant. He isolated the DNA from the plant and cloned it into a vector but after overexpression in *E.coli*, he got mis folded protein. Why? What changes he could do?	2 Marks
VI	What is the use of streptokinase and Humulin?	2 Marks
VII	Name two diseases for which toxoids are used as vaccines.	2 Marks
VII	What is the principle behind the ELISA test?	2 Marks
IX	What role do interferons play in the immune system?	2 Marks
X	What are the key steps to produceStreptomycin?	2 Marks
XI	What is the importance of Riboflavin and Vit B12?	2 Marks
XII	What is foam plasma substitutes? Write down any two application of it.	2 Marks

BEST OF LUCK