

Reg. No.

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M.E. / M.TECH.. DEGREE EXAMINATIONS, MAY 2023

Second Semester

BY22203 – IMMUNOTECHNOLOGY*(Biotechnology)***(Regulation 2022)****TIME: 3 HOURS****MAX. MARKS: 100**

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO 1	Explains immune responses and techniques to assess immune responses.	2
CO 2	Experiment with antibodies to assess immune responses.	3
CO 3	Organizes assess immune response assessment using assays.	3
CO 4	Distinguishes the various cases of vaccine based on its principle.	4
CO 5	Appraise development of engineered antibodies.	5

PART- A (20 x 2 = 40 Marks)

(Answer all Questions)

	CO	RBT LEVEL
1. Compare BALT and MALT.	1	2
2. Apply the principle of agglutination in immune detection.	1	3
3. Outline on antigen independent T cell activation.	1	2
4. Illustrate MAC in complement system with neat sketch.	1	2
5. Summarize the role of enzyme conjugated to secondary antibodies.	2	2
6. Show the ordered arrangement of the set up in western blot analysis with pictorial representation.	2	2
7. List the applications of the immunoelectroporesis technique.	2	3
8. Relate the use of SDS and heating in PAGE.	2	2
9. List the applications of chromium release assay.	3	4
10. Summarize on what basis ratio of antibody to Ag is chosen in RIA?	3	2
11. Show how ultrastructural localization of intracellular proteins and antigens is done by immunoferritin techniques?	3	2
12. Outline on phycoerythrin and mention to which region of antibody it is attached.	3	2
13. Infer on development of vaccine for pathogen which cannot be cultured under natural condition.	4	4
14. What is the name of the first approved recombinant vector vaccines? Explain on its synthesis.	4	2
15. Give the test to separate B and T cells in buffy coat layer.	4	4
16. Demonstrate which among attenuated and killed vaccine will help to eradicate a diseases.	4	2
17. What are the factors to be followed for successfully designing a vaccine?	5	3
18. Summarize on immunotherapy.	5	2
19. Organize on how humanization of antibody is carried out?	5	3
20. Infer on abzymes.	5	2

PART- B (5 x 10 = 50 Marks)

		Marks	CO	RBT LEVEL
21. (a)	Explain the role of innate immune response cells to produce early level defense against infection.	(10)	1	3
	(OR)			
(b)	Exemplify different types of antigens, their structure and preparation for raising antibodies.	(10)	1	3
22. (a)	Examine the diagnostic and other applications of Monoclonal antibodies.	(10)	2	4
	(OR)			
(b)	Inspect the antigen antibody interaction by using plaque forming cell assay.	(10)	2	4
23. (a)	Interpret the role of CD markers in identification of lymphocytes.	(10)	3	3
	(OR)			
(b)	Explain the role of cytokines in promoting anti-viral activity, degranulation, chemotaxis and colony formation.	(10)	3	3
24. (a)	How proteins from pathogens are used to develop proteins based vaccine?	(10)	4	3
	(OR)			
(b)	Make use of plants to produce edible vaccine to rise immunological memory.	(10)	4	3
25. (a)	Illustrate the technique of combinatorial libraries for generating antibody of high affinity and specificity for almost any target.	(10)	5	4
	(OR)			
(b)	Inspect on how production of human monoclonals can be enhanced with genetically engineered antibodies.	(10)	5	4

PART- C (1 x 10 = 10 Marks)

(Q.No.26 is compulsory)

		Marks	CO	RBT LEVEL
26.	Identify the usage of fluorescent antibodies in flow cytometer for enumerating the cell numbers and cell types.	(10)	3	5
