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**M.E. / M.TECH. DEGREE EXAMINATIONS, MAY/JUNE 2017**

**SECOND SEMESTER**

**BIOTECHNOLOGY**

**BY16202 – IMMUNOTECHNOLOGY**

**(Regulation 2016)**

**Q. Code: 643447**

**Time: Three Hours**

**Maximum : 100 Marks**

Answer **ALL** questions

**PART A - (10 X 2 = 20 Marks)**

1. What are primary lymphoid organs? Give examples.
2. Differentiate between CMI and HI response.
3. List out the applications of monoclonal antibodies.
4. Predict the use of HRP in ELISA.
5. What do you know about Ficoll paque method?
6. Expand FACS. Mention their clinical applications.
7. What are vaccines?
8. Define attenuated vaccines. Give examples.
9. Comment on the significance of combinatorial library.
10. What are engineered antibodies?

**PART B - (5 X16 = 80 Marks)**

11. (a) (i) Describe the structure of thymus with a neat sketch. Mention their role in the development of immunity. (10)
- (ii) Draw the structure of lymph node and explain their significance in providing immunity. (6)

**(OR)**

- (b) (i) Give a brief note on structure, differentiation and function of B and T lymphocytes. (12)
- (ii) Describe the activation and process of classical complement pathway. (4)

12. (a) (i) Elucidate in detail the production of monoclonal antibody with a neat flow chart. (12)  
(ii) What are the clinical applications of agglutination reaction? (4)  
(OR)
- (b) (i) Write in detail the process of sandwich ELISA and its applications. (10)  
(ii) Give a brief note on antigen detection. (6)
13. (a) (i) Explain the methodology for separation of lymphocytes from blood and how to identify different subsets of T lymphocytes. (10)  
(ii) Comment on MLR assay and its clinical significance. (6)  
(OR)
- (b) (i) Describe in detail the various procedures involved in separation of cytokines. (10)  
(ii) What is meant by HLA typing? Add a note on its role in immunity and applications. (6)
14. (a) (i) How DNA vaccines are produced? Add a note on plant based vaccines and its applications. (12)  
(ii) Comment on the significance of reverse vaccinology. (4)  
(OR)
- (b) (i) How recombinant antigens are used as vaccines? Give examples. (10)  
(ii) Mention the significant importance of protein vaccines in health care system. (6)
15. (a) (i) Catalytic antibodies are acting as potential therapeutics. Justify. (10)  
(ii) List out the properties of catalytic antibodies. (6)  
(OR)
- (b) (i) What are idiotypic antibodies? How they are produced? (10)  
(ii) Elucidate the applications of idiotypic antibodies. (6)