Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_

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**End Semester Examination – Nov/Dec– 2018**

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| **Code :** | **14BT3020** | **Duration :** | **3hrs** |
| **Sub. Name :** | **IMMUNOTECHNOLOGY** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course Outcome** | **Marks** |
| 1. | a. | What is the relationship between B cells, plasma cells and their antibodies? | CO1 | 3 |
| b. | What are the salient features of antigen-antibody reaction? | CO1 | 10 |
| c. | What are the structural regions of H and L chains that contribute to antigen binding? | CO1 | 7 |
| (OR) | | | |  |
| 2. | a. | How are immunoglobulin genes constructed and where are they located in human genome? | CO1 | 5 |
| b. | Explain the principle and types of immunofluorescence. | CO2 | 5 |
| c. | Define gamma globulin electrophoresis. Explain the principle, applications, advantages and limitations of electrophoresis | CO2 | 10 |
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| 3. | a. | What are the clinical applications of flow cytometry? | CO2 | 10 |
| b. | Define monoclonal antibodies and its types. How do monoclonal antibodies kill cancer cells? | CO2 | 5 |
| c. | What is the major histocompatibility complex and how is it involved in the function of antigen-presenting cells? | CO1 | 5 |
| (OR) | | | |  |
| 4. | a. | How do B cells and T cells recognize their cognate antigens? | CO1 | 5 |
| b. | Briefly explain the principles, uses and limitations of RIA. | CO2 | 10 |
| c. | Define abzymes? Describe the mode of action and its applications. | CO3 | 5 |
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| 5. | a. | What are the different types of ELISA? Write down its advantages and disadvantages of the different types of ELISA. | CO2 | 10 |
| b. | What is flow cytometry? Explain different types of lights used in a flow cytometry? | CO2 | 6 |
| c. | Define plantibodies. Write down its applications. | CO3 | 4 |
| (OR) | | | |  |
| 6. | a. | What are chimeric antibodies? Write any five important applications of these antibodies. | C03 | 6 |
| b. | Write a note on immunotoxins. | CO3 | 4 |
| c. | What is bi specific antibodies? Write down its applications in cancer therapy. | CO3 | 10 |
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| 7. | a. | Define plastibodies and its applications. | CO3 | 6 |
| b. | Differentiate diabodies and tetrabodies. |  | 6 |
| c. | What are the main environmental factors that lead to weakening of normal immune response? | CO3 | 8 |
| (OR) | | | |  |
| 8. | a. | Write a short note on immunotargeting. | CO4 | 5 |
| b. | Define single chain Fc? Differentiate bivalent and trivalent scFvs. | CO4 | 7 |
| c. | Define asplenia. Write a short note on congenital asplenia. | CO4 | 8 |
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|  | | **Compulsory**: |  |  |
| 9. | a. | Describe the diseases associated with superantigen production. | CO4 | 6 |
| b. | Write a short note on hyper IgM immunodeficiency. | CO4 | 8 |
| c. | What causes Bruton’s disease? What are the symptoms of Bruton’s disease? | CO4 | 6 |