



'সমানো মন্ত্র: সমিতি: সমানী'

**UNIVERSITY OF NORTH BENGAL**

B.Sc. Honours Part-III Examination, 2022

**MICROBIOLOGY**

**PAPER-VII**

Time Allotted: 4 Hours

Full Marks: 80

*The figures in the margin indicate full marks.*

1. Answer the following questions: 1×16 = 16
- (a) What is Serum sickness?
  - (b) Define opsonization.
  - (c) What do you mean by antibody affinity and avidity?
  - (d) What are conformational epitopes?
  - (e) What is respiratory burst?
  - (f) What is diapedesis?
  - (g) Name one organ-specific and one systemic autoimmune disease.
  - (h) Name two virulence factors produced by Staphylococci.
  - (i) What are sequestered antigens?
  - (j) What are Super antigens?
  - (k) What is the difference between antigenic shift and antigenic drift?
  - (l) What is the function of NK cells?
  - (m) What are collectins?
  - (n) What do you mean by a convalescent carrier?
  - (o) What is the difference between passive and active immunity?
  - (p) What is a pandemic? Give example.
2. Answer any *two* of the following questions: 16×2 = 32
- (a) Describe the processes of type III and type IV hypersensitivity with suitable diagrams. 8+8 = 16
  - (b) What are monoclonal antibodies? Elucidate the production of monoclonal antibodies utilizing the Hybridoma technology. State the significance of HAT selection. Write a note on applications of mAb. 2+8+2+4 = 16
  - (c) Describe the morphological and cultural characteristics and toxins and enzymes produced by *Clostridium tetani*. Present the life cycle of *Plasmodium vivax* with suitable diagram establishing its relationship with malarial symptoms. 9+7 = 16

- (d) What are the advantages and disadvantages of attenuated and inactivated vaccines? Write a note on passive immunization. Discuss about recombinant vaccines. What are ISCOMs? 4+4+7+1  
= 16
3. Answer any *four* of the following questions: 8×4 = 32
- (a) What are autoimmune diseases? Describe the factors that are instrumental in causing autoimmune diseases. 2+6 = 8
- (b) Describe pathogenesis, symptoms and treatment of syphilis. 8
- (c) Give a detailed account of ELISA. 8
- (d) Give a comparative account of various isotypes of immunoglobulins. What are haptens? 6+2 = 8
- (e) Write about the mechanism of bacterial adhesion in detail. 8
- (f) Write notes on: 4+4 = 8
- (i) Emerging and resurgent diseases
- (ii) Lattice hypothesis.

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