'समानो मन्त्रः समितिः समानी'

UNIVERSITY OF NORTH BENGAL
B.Sc. Honours 5th Semester Examination, 2023

CC12-MICROBIOLOGY

IMMUNOLOGY

Time Allotted: 2 Hours　　　　　　　　　　　　　　　　　　　　Full Marks: 40

The figures in the margin indicate full marks.

1. Answer any ***five*** of the following:　　　　　　　　　　　$1 \times 5 = 5$
   - (a) What are "Bence-Jones" protein?
   - (b) What is the use of aminopterin in HAT medium?
   - (c) What is allotype?
   - (d) What is meant by GALT?
   - (e) What are professional phagocytes?
   - (f) What is cytokine storm?
   - (g) What are haptens?
   - (h) Write down the full form of 'SCID' mice.

2. Answer any ***three*** of the following:　　　　　　　　　　$5 \times 3 = 15$
   - (a) What are autoimmune diseases? Describe one systemic autoimmune disease.　　1+4
   - (b) Explain how antigens are processed and presented on the surface of MHC molecule.　　5
   - (c) What is ELISPOT? Explain in detail.　　1+4
   - (d) Describe briefly the mechanism involved in IgE-mediated hypersensitivity.　　5
   - (e) How is nude mice different from SCID mice? Write a note on Chediak-Higashi Syndrome.　　1+4

3. Answer any ***two*** of the following:　　　　　　　　　　$10 \times 2 = 20$
   - (a) What stimulates VDJ recombination? Explain the mechanism of VDJ recombination.　　3+7
   - (b) Explain the structure and function of Thymus with the help of suitable diagram. Write a note on CALT.　　7+3
   - (c) Explain the principle of immunoelectron microscopy. Explain Rocket immunoelectrophoresis with suitable example.　　5+5
   - (d) Write a note on adjuvants. Explain the different characteristics of an antigen.　　3+7

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