

06 APR 2023

KATHMANDU UNIVERSITY
End Semester Examination [C]
April, 2023

Marks Scored:

Level : B.Tech.
Year : IV

Course : BIOT 409
Semester : I

Exam Roll No. : Time: 30 mins.

F. M. : 20

Registration No.:

Date :

SECTION "A"
[20Q. × 1 = 20 marks]

Choose the most appropriate answer and **mark [x]** in the box.

- _____ is when antibody elicited by one antigen reacts with an unrelated antigen.
 affinity avidity cross reactivity autoimmunity
- _____ is **NOT** a function of adjuvant.
 Immune cell presentation Inflammasome activation
 Depot effect Cytokine secretion
- Release of sequestered antigens can trigger _____.
 immunodeficiency autoimmunity
 tolerance hypersensitivity
- Which of the following statements regarding cytokine antagonist is **FALSE**?
 are proteins that inhibit the biological activities of cytokines
 can bind directly to a cytokine receptor but fail to activate the cell
 can bind directly to a cytokine, inhibiting its activity
 IL-2Ra is the best characterized antagonist
- Which of the following statements regarding *Erythroblastosis fetalis* is **TRUE**?
 During the first pregnancy, the exposure of Rh antigen leads to the generation of memory cells and the IgG response that is harmful during the subsequent pregnancy
 The condition may be prevented by infusing and reducing exposure to Rh antigen within 24-48 hours of pregnancy
 Plasmapheresis may be used to remove the antibodies from the circulation
 All of the above
- Protease inhibitor drugs prescribed during Highly Active Antiretroviral Therapy (HAART) _____.
 Inhibits enzyme protease
 Inhibits viral replication and viral load
 Prevents the interaction between the virus and the co-receptor
 Prevents the interaction between the virus and the receptor
- The autoimmune disorder with an elevated anti-thyroglobulin antibody is called _____.
 Hashimoto thyroiditis Grave's disease
 Goodpasture syndrome Myasthenia Gravis

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F.M. : 55

SECTION "B"
[7Q. × 5 = 35 marks]

Attempt *ALL* questions.

1. Explain with proper example(s) the circumstances giving rise to Host vs Graft and Graft vs Host Reactions.
2. Discuss the strengths and limitations of reverse vaccinology over conventional method of vaccine development.
3. Explain agglutination inhibition reaction in context of Doping test.
4. Discuss Systemic Lupus Erythematosus (SLE) as a systemic autoimmune disorder.
5. Write short note on cytokine based therapy.
6. Discuss the pattern and significance of different precipitin lines.
7. Discuss the role of cytokine receptors in HIV infection.

SECTION "C"

8. Give TWO differences between *ANY FIVE* [5Q × 2 = 10 marks]
 - a. Haptens and Adjuvants
 - b. Whole organism vaccine and Subunit vaccine
 - c. Type II and Type III hypersensitivity
 - d. Primary and Secondary immunodeficiency
 - e. Interferons and Tumor Necrosis Factors
 - f. Direct and Indirect ELISA
9. Explain *WHY/HOW* for *ANY FIVE* [5Q × 2 = 10 marks]
 - a. The acceptance rate of cornea grafts is higher than kidney grafts.
 - b. Myasthenia Gravis is an organ-specific autoimmune disorder.
 - c. HIV causes immunodeficiency in patients.
 - d. Attenuated viral vaccines can activate both humoral and cell-mediated immunity.
 - e. Western Blotting is a type of confirmatory test.
 - f. All immunogens are antigens but all antigens are not immunogens.