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BRAINWARE UNIVERSITY

Term End Examination 2024-2025
Programme – M.Sc.(MB)-2024
Course Name – Immunology
Course Code - MMB20109
(Semester II)

Full Marks : 60 **Time : 2:30 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question) 1 x 15=15

1. *Choose the correct alternative from the following :*

(i) Recall the second most abundant Ig is

a) IgD b) IgA
c) IgM d) IgE

(ii) State the class of antibodies, that can cross placenta is

a) IgM b) IgG
c) IgA d) None of these

(iii) Infer type I hypersensitivity classically involves the following

a) IgE b) IgM
c) IgD d) Macrophages

(iv) Explain, cell mediated immunity (CMI) participates in:-

a) Delayed hypersensitivity reaction b) Graft versus host reaction
c) Allograft rejection d) All of these

(v) Select the first recombinant antigen vaccine approved for human use is

a) Hepatitis B vaccine b) Hib vaccine
c) Var vaccine d) DPT vaccine

(vi) Explain the following that is not applicable for ELISA

a) Detection of hepatitis B markers im serum b) Percentage of Hb in blood
c) Detection of HIV antibodies in blood sample. d) Detection of mycobacterium antibodies in tuberculosis

(vii) Evaluate-A patient is suspicious of having breast cancer.The type of test will a physician conduct first to diagnose the cancer

a) Blood Test
b) Mammography
c) CT scan
d) None of these

(viii) Choose,Helper T-cells can be distinguished from killer T-cells by the presence of _____

a) CD-2 receptor
b) CD-3 receptor
c) CD-4 receptor
d) CD-8 receptor

(ix) Select,the T-cell receptor genes were originally identified using:

a) Subtractive hybridization.
b) A monoclonal anti-idiotype.
c) PCR
d) In situ hybridization.

(x) Conclude, the effectors that can eradicate parasites are,

a) Macrophages
b) Neutrophils
c) Complement
d) Eosinophils

(xi) Interpret,chemicals released from mast cells during an allergic reaction include all of the following except

a) Prostaglandins
b) Histamines
c) Cytokines
d) Interferons

(xii) Interpret, Cross-presentation of exogenous antigen to a T-cells does not require the involvement of:

a) MHC class I
b) MHC class II
c) Antigen-processing
d) An antigen-presenting cell.

(xiii) Examine, The T-cell receptor link to MHC/peptide is enhanced by interaction between MHC class II on the antigen-presenting cells with the following molecule on the T-cell:

a) CD4
b) CD2
c) CD28
d) None of these

(xiv) Predict,Strongly immunogenic tumors appear

a) In virtually all cancers.
b) In immunosuppressed patients
c) Only in lymphoma and leukemia
d) Only in elderly patients.

(xv) Summarize, DNA vaccines:

a) Are relatively poor at stimulating cytotoxic T lymphocyte responses in mice
b) Are only effective if followed by a protein boost
c) Require cold storage in tropical countries
d) May have distinct advantages when preparing subunit vaccines against viruses which frequently alter their antigens

Group-B

(Short Answer Type Questions) 3 x 5=15

2. State the different cells and organs of the immune system (3)
3. Explain the terms "idiotype","allotype" and "isotype" (3)
4. Interpret the role of CD4 and CD8 proteins in immune response (3)
5. Estimate how can "chimeric antibody" be used for the treatment of various diseases (3)
6. Plan the instances in which allografts can be accepted even without an immunosuppressive therapy (3)

OR

Explain and differentiate about primary and secondary immunodeficiency diseases (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. State the structure and functions of macrophages,granulocytes and NK cells (5)
8. Distinguish between B cell receptor and T cell receptor emphasising on their structure,organization and function (5)
9. Evaluate how many ways can antibodies lead to host defence upon an infection/occurrence of disease. (5)
10. Explain and illustrate the importance of VDJ recombination in antibody creation (5)
11. Predict and summarize a note on the Immune response to tumors with suitable diagram (5)
12. Deduce the five stages of "phagocytosis" in details for killing bacterial or viral pathogens (5)

OR

Compare the overview of cytosolic and endocytic pathways for antigen presentation with illustrations and how they can help to combat bacterial and viral diseases. (5)

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