

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2022
(Second Semester)

Branch – BIOTECHNOLOGY

IMMUNOTECHNOLOGY

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (5 x 1 = 5)

1. To _____ layer, the immune cells adhere for the extravasation.
(i) endothelium (ii) epithelium
(iii) neurons (iv) kupffer cells
2. Which immunoglobulin takes care of mucosal immunity?
(i) IgD (ii) IgA
(iii) IgM (iv) IgG
3. MHC Class II are normally found on _____
(i) antigen presenting cells (ii) T-helper cells
(iii) Natural Killer cells (iv) Suppressor T-Cells
4. _____ is a tissue moved from one location within the body to another.
(i) Xenograft (ii) Allograft
(iii) Isograft (iv) Autograft
5. Which method can be used to detect the cytokine secreting cells?
(i) ELISPOT (ii) Sandwich ELISA
(iii) Direct ELISA (iv) Indirect ELISA

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 3 = 15)

6. a) Show how Toll like receptors play an important role in the cell signaling?
OR
b) Discuss the structure of antigens.
7. a) Illustrate the structure and functions of dendritic cells.
OR
b) Explain the role of mucosal immunity in defense and allergy.
8. a) Analyze the role of HLA test and expand the same.
OR
b) Describe the mechanism of Antibody-dependent cellular cytotoxicity.

Cont...

9. a) Assume if there are no complement proteins in our body, what might happen if the immune system encounters the pathogens?
OR
b) Classify the different types of tissue grafts.
10. a) "CAR-T cells are best suited for the treatment of cancer". Justify the statement.
OR
b) State how AlphaLISA can give better accuracy, sensitivity, wider range and small size samples than traditional ELISA?

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

11. a) Categorize the different types of acquired immune response.
OR
b) Interpret how the leukocyte extravasation helps in the inflammation process? List the steps of extravasation.
12. a) Elucidate the structure and functions of mast cells.
OR
b) Enumerate the steps involved in the activation of B-cells to produce antibody against the pathogen.
13. a) Differentiate MHC Class I and Class II structure.
OR
b) Assess how the antigen presenting cells (APCs) are important for the immune system? If there are no APCs, what will happen?
14. a) Elucidate the role of immune system in curbing the bacterial infection.
OR
b) Categorize the different immunological mechanisms that occurs during the Type 3 Hypersensitivity.
15. a) Interpret the advancements, clinical significance and future aspects of hybridoma technology.
OR
b) Criticize how CRISPR can create the ethical issues, debate and challenges?

Z-Z-Z

END