

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



M.Sc. DEGREE EXAMINATION – BIOTECHNOLOGY

FIRST SEMESTER – NOVEMBER 2019

PBT 1504/16/17/18PBT1MC04 – IMMUNOLOGY

Date: 07-11-2019

Dept. No.

Max. : 100 Marks

Time: 01:00-04:00

PART – A

Answer ALL the Questions

I. Choose the correct answer

(5 x 1 = 5 Marks)

1. Tuberculosis is a classic example of what type of hypersensitivity?
a) Type I b) Type II c) Type III d) Type IV
2. MHC alleles are
a) Co-dominant b) recessive c) polymorphic d) both a & c
3. Which of the following is a systemic autoimmune disorder?
a) Myasthenia Gravis b) IDDM c) Rheumatoid arthritis d) SCID
4. The process of weakening a pathogen is called
a) Vaccination b) attenuation c) immunization d) virulence reduction
5. _____ is an antiglobulin test.
a) Widal b) Coombs test c) ELISA d) RIA

II. State whether the following are true or false.

(5x1=5 Marks)

6. Response time is hours for innate immunity and days for adaptive immunity.
7. Diversity region is present only in light chain.
8. Di-George's syndrome is an example of primary immunodeficiency.
9. MMR is a combined vaccine.
10. Wassermann reaction is a complement fixation test.

III. Complete the following

(5 x 1 = 5 Marks)

11. _____ results in a clone of cells with the same antigenic specificity as the original parent cell.
12. _____ proteins catalyse joining of last V domain and first J domain in the DNA of Ig gene.
13. Allergy to penicillin is an example of _____.
14. Vaccination was discovered by _____.
15. _____ is an enzyme used in ELISA

IV. Answer the following, each within 50 words

(5 x 1 = 5 Marks)

16. What are Kupffer cells and where are they found?
17. What is the significance of somatic hypermutation that occurs in B cells?
18. Give an example of graft versus host rejection.
19. What are vector vaccines?
20. Differentiate agglutination from precipitation.

PART B

Answer the following, each within 500 words.

(5 x 8 = 40 marks)

Draw diagrams wherever necessary

21. (a) Describe the structure on an immunoglobulin.
(OR)
(b) Describe the thymus and comment on its immunological significance.
22. (a) Briefly describe the structure of MHC Class I and add a note on its function.
(OR)
(b) Write a note on the pattern of inheritance in MHC genes.
23. (a) Briefly explain **adenosine deaminase deficiency**.
(OR)
(b) Write a note on the symptoms, induction and treatment of Systemic Lupus Erythematosus.
24. (a) Write briefly on Abzymes.
(OR)
(b) Give an outline on vaccine production.
25. (a) Write a short note on FACS.
(OR)
(b) Discuss the various immunoprecipitation techniques.

PART – C

Answer any TWO of the following, each within 1500 words.

(2 x 20 = 40 Marks)

Draw diagrams wherever necessary.

26. Illustrate the process of Hematopoiesis. Add a note on any four cells of the immune system.
27. Discuss the clinical significance of the CD47-mediated pathway and the LILRB1 pathway in cancer biology.
28. Explain Hybridoma technology in the preparation of monoclonal antibodies.
29. Write in detail in the types of ELISA.

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