2020

Gurudas College

ZOOLOGY – HONOURS

Paper: CC- 10

Full Marks: 60 **Time: 2 hrs. 30 mins.**

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as for as practicable.

Part A

Answer ***any twenty five*** questions from the following: 2x25

1. Differentiate between behavioural and biomedical risk factors.
2. Differentiate between incubation and latency periods of a disease.
3. Name any 2 phagocytic cells of the immune system. What are NK cells?
4. Give the full forms of GALT, MALT, NALT and BAL.
5. Differentiate between acquired and congenital diseases.
6. Name any 4 lifestyle choices that contribute to poor health.
7. What are the signals required for activation of a naïve T cell?
8. What are the differences between cell mediated immunity and humoral immunity.
9. Write a short note on Sandwich ELISA.
10. Write down the differences between MHC class I and MHC Class II molecules.
11. Briefly state the role of "HAT" medium in monoclonal antibody production.
12. State the functions of immunoglobulins.
13. Mention 2 functions of each of the following cytokines.

a. Interferon γ
b. Transforming growth factor β

14. What is negative selection in T- cell development?
15. Give a schematic diagram of the structure of immunoglobulins.
16. What is an antigen presenting cell? Give two examples.
17. Differentiate between T helper cells and T cytotoxic cells.
18. State the properties of cytokines.
19. Give a schematic representation of T-cell receptor complex.
20. What do you mean by isotype switching?
21. Write the full form of ADCC, DNP, MAC and MBL.
22. Write the function of adjuvants.
23. Why epitopes are important?
24. What is the difference between antigenicity and immunogenicity?
25. How anaphylotoxins work?
26. Define opsonisation of antigens.
27. What is erythroblastosis fetalis?
28. What is atopy?
29. Name four secondary metabolites of Type I Hypersensitive reaction.
30. What is haematopoiesis?
31. What is herd immunity?

32. Define toxoid. Give example.
33. What is SMAA complex?
34. What is ISCOM? Write its function.
35. Write the function of hapen-carrier conjugate.

Part B
Internal Assessment

Choose the correct alternative for ***any ten*** from the following: 1x10

1. Protective factors for good health include
   A. A high daily intake of alcohol and fast food
   B. A high daily intake of fruits and vegetables
   C. A high daily intake of alcohol and fruits
   D. A high daily intake of vegetables and fast food

2. Diseases may **be**
   A. Airborne
   B. Foodborne
   C. Infectious
   D. All of the above
   E. None of the above

3. The liver
   A. Contains defence cells directly beneath the mucous membrane that prevent bacteria and viruses from attaching.
   B. Contains Langerhans cells that are part of the adaptive immune system
   C. Contains gut flora that make it difficult for pathogens to enter and settle in the body
   D. Contains many immunologically active cells acting as a "sieve" for antigens carried to it via the portal system

4. Vaccination were pioneered by
   A. Jenner and Pasteur
   B. Porter and Edelman
   C. Emil von Behring
   D. Karl Landsteiner

5. Adjuvants exert
   A. Prolonged antigen persistence
   B. Enhanced co-stimulatory signals
   C. Induced granuloma formation
   D. All of the above

6. Complement fixation:
   A. Can be modified by the Cholera toxin
   B. Has intrinsic Guanylate cyclase activity
   C. Can be desensitized by phosphorylation
   D. All the above

7. Complement component C3 is cleaved by:

A. C3b
B. C3bBb
C. Factor B
D. Factor D

8. Hypersensitivity reactions are broadly classified into four different types. Which of the following hypersensitivity occurs via IgE antibody?

A. Type I hypersensitivity
B. Type II hypersensitivity
C. Type III hypersensitivity
D. Type IV hypersensitivity

9. The type I early response occur within minutes of allergic response. Which of the following is the early mediator of type I hypersensitivity reaction?

A. Histamine
B. Leukotriene
C. Prostaglandin
D. All of the above

10. The antibody which gives a primary immune response is:

A. IgA
B. IgE
C. IgG
D. IgM

11. Which of the following is a function of Tumor necrosis factor-α?

A. Proliferation of T cells
B. Activation of neutrophils
C. Inhibition of T cell proliferation
D. Augmentation in expression of MHC I and MHC II molecules

12. The exogenous pathway of antigen presentation is characterised by:

A. Presentation of antigen to T_H ($CD\ 4^+$) cells
B. Presentation of antigen to T_C ($CD\ 8^+$) cells
C. Presentation of antigen to B cells
D. Presentation of antigen on MHC class I

13. Which of the following sentence is false:

A. J chain is associated with IgA dimer
B. IgE mediates type I hypersensitivity
C. IgG is a good opsonin
D. IgM normally exists as a tetramer

14. Identify the true statement from the followings:

A. CD21 and CD 19 are the co-receptors present on B cells
B. CD 5 and CD 28 are the co-receptors present on B cells
C. CD 21 is a co-receptor present on T cells
D. CD 19 is a co-receptor present on T cells

15. T_C $CD8^+$ cells carry out their killing function via:
    A. Secretion of IL-6 and IL-12
    B. Secretion of INF-α and INF-γ
    C. Secretion of granzymes and perforin
    D. Recognition of antigenic peptide that are bound to MHC class II molecule