

2022

Zoology

[P.G.]

(CBCS)

(M.Sc. First Semester End Examination-2022)

PAPER-103

Full Marks:40

Time: 02 Hrs

The figures in the right hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

[Use separate Answer Script for each Group]

Group A

Marks 20

(Immunology)

- 1. Answer any two questions of the following: 2x2= 4**
- a) What are haptane and adjuvant? 2
 - b) What is class switch? 2
 - c) What is Epitope? 2
 - d) What are the basic difference between MHC I and MHC II molecule? 2

(2)

2. Answer any two questions of the following: $2 \times 4 = 8$

- a) State the comparison of the co-stimulatory protein required to activate a T_H cell and a B cell in response to same foreign protein.
- b) Write down the difference between humoral and cell mediated immune response.
- c) Write about southern blotting hybridization.
- d) Differentiate between active and passive immunity. Write a short note on IgM.

3. Answer any one question of the following: $1 \times 8 = 8$

- a) Explain the early signalling events in a B-cell activated by the binding of specific foreign antigen to its BCRs.
- b) Briefly describe the process of maturation of T cell. Why this process is not possible outside the thymus gland?

Group – B

Marks 20

(Methods of Biology)

4. Answer any two questions of the following: $2 \times 2 = 4$

- a) State the importance of T_m value in PCR. 2
- b) What do you mean by blue-white screening? 2
- c) Write a note on homopolymer tailing. 2
- d) What is VNTR? Give example. 2

(3)

5. Answer any two questions of the following: $2 \times 4 = 8$

- a) Differentiate isoschizomers and neoschizomers? Write a note on inverse PCR. 2+2
- b) Write down the role of linkers and adaptors used in genetic engineering. 2+2
- c) Write the principle of SDS-PAGE. What is oil cating sug. 2+2
- d) Discuss the cell fractionation method.

6. Answer any one question of the following: $1 \times 8 = 8$

- a) What is biotechnology? Comment on the scopes of biotechnology in environmental science. What is Bioremediation? Discuss in brief the in-situ and ex-situ bioremediation 2+2+4
- b) State the principle and applications of thin layer chromatography. What do you mean by planar and column chromatography? 5+3
