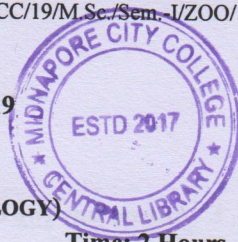


PG (NEW) CBCS
M.Sc. Semester-I Examination, 2019
ZOOLOGY
PAPER: ZOO-103
(IMMUNOLOGY AND METHODS IN BIOLOGY)



Full Marks: 40

Time: 2 Hours

The figures in the margin indicate full marks.

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

Illustrate the answers whenever necessary.

Use separate Answer Scripts for Group-A & Group-B

Group A

(IMMUNOLOGY)

- 1. Answer any two questions from the following:** **2×2=4**
- a) What do you mean by Antigen Presenting cells(APC's) ? Give example.
 - b) Differentiate Haptens with Immunogens.
 - c) What are primary and secondary lymphoid organs? Give example.
 - d) "Haematopoietic stem cells (HSC) are designated as multipotent cells"-Explain.
- 2. Answer any two of the following questions:** **2×4=8**
- a) Distinguish between sequential epitope and conformational epitope.
 - b) What are memory cells? State their functions during vaccination. 1+3
 - c) Describe the structure and biological functions of IgA molecule.
 - d) Write notes on ADCC.
- 3. Answer any one of the following questions:** **1×8=8**
- a) i) What do you mean by titer?
ii) Write the principle of RIA.
iii) Name two enzymes used in ELISA. Explain indirect ELISA with proper diagram. 2+2+1+3
 - b) i) Describe the structure of class I and class II MHC molecules with suitable diagram.
ii) Describe the B-cell and T-cell cooperation for antibody synthesis. 4+4

(Turn Over)

(2)

Group B
(METHODS IN BIOLOGY)

1. Answer any two questions from the following: 2×2=4
- a) Write the principle of SDS-PAGE.
 - b) What are the advantages of using YAC vector.
 - c) What do you mean by FISH?
 - d) What is 'Cryopreservation'?
2. Answer any two of the following questions: 2×4=8
- a) Write a short note on 'DNA fingerprinting'.
 - b) Write the basic principle of western blot and its application.
 - c) Write the principle and applications of 2D Gel electrophoresis.
 - d) Write notes on Bioremediation and Biomagnification. 2+2
3. Answer any one of the following questions: 1×8=8
- a) Write down the basic principle of PCR. What do you mean by Rt PCR? What way you may design primer for a PCR amplification. 2+2+4
 - b) Write the principle, procedure and application of affinity chromatography. 3+3+2

