UUCMS. No. ⬚⬚⬚⬚⬚⬚⬚⬚⬚⬚⬚

B.M.S COLLEGE FOR WOMEN, AUTONOMOUS
BENGALURU – 560004

IV SEMESTER END EXAMINATION –SEPTEMBER/OCTOBER-2023

B.Sc –ZOOLOGY
Gene Technology, Immunology & Computational Biology

Course Code: ZOO4DSC04   **QP Code: 4017**

Duration: 2 ½ Hours   **Max marks: 60**

Instructions: 1. Answer all the sections.

          2. Draw neat labelled diagrams wherever necessary.

PART-A

I. Answer the following in one word or one sentence each.   **(5x1=5)**

1. Name the enzymes capable of making internal cuts in DNA molecule.

2. Give an example for primary antigen-presenting cells.

3. Which neutralizing antibody in respiratory tract provide immunity against viral infection?

4. Expand BLAST.

5. What is called as most frequently occurring number in a set of values?

PART-B

II. Answer any FIVE of the following.   **(5x3=15)**

1. What are the characteristic features of gene cloning vectors?

2. List out any three applications of Biosensors**.**

3. Write a note on Alkaline Phosphatase.

4. Draw a neat labelled diagram of an antibody.

1

5. Mention any 3 types of Vaccine with example.

6. What is biological data base? Classify with example.

7. Calculated **r** value of Karl Pearsons correlation coefficient is 0.98 & degrees of freedom is 16. Calculate the value of **'t'** to find out level of significance.

PART-C

III. Answer any FOUR of the following.   (4x5=20)

1. Explain the steps involved in Hybridoma technology for the production of Monoclonal antibodies.

2. Describe the structure of MHC I

3. Mention the types of immunity with example.

4. Differentiate pairwise & multiple sequence alignment

5. Mention the way of data representation & explain the types of bar diagram.

6. Calculate the standard deviation by step derivation method from the following data.

X	51-55	56-60	61-65	66-70	71-75	76-80	81-85
f	5	8	9	11	8	6	3

PART-D

IV. Answer any TWO of the following.   (2x10=20)

1. Explain the process of production of human recombinant Insulin.

2. Briefly explain a) role of B- Lymphocytes . b) Process of Phogocytosis

3. Give a detailed account on Types of Grafts and graft rejection response.

4. In an ecological study, water samples were collected in alternate months to study the phytoplankton population. The number of organisms are expressed as organisms/ 1×10^3 are given. Test the hypothesis that the number of organisms present in each sample does not depend on the particular sample.

Sample numbers	No. of organisms / 1×10^3
1	80
2	83
3	101
4	60
5	93
6	87

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