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B.Sc./3rd Sem (H)/NUTR/23(CBCS)

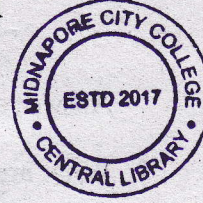
2023

3rd Semester Examination

NUTRITION (Honours)

Paper : SEC 1-T

[CBCS]



Full Marks : 40

Time : Two Hours

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

[Immunology, Toxicology and Public Health]

Group - A

Answer any *five* of the following questions : $2 \times 5 = 10$

1. What do you mean by LD_{50} of a toxicant?
2. What is aquatic toxicology?
3. Classify different types of lymphocyte.
4. What is humoral immunity?
5. Write the principle of vaccination.
6. What do you mean by epitope and paratope?

P.T.O.

(2)



7. Write the difference between toxicant and poison.
8. Write the chemical properties of antibody.

Group - B

Answer any *four* of the following questions : 5×4=20

9. What are the four steps of humoral immune response?
Write down the mechanism of cell mediate immunity. 2+3

10. Write down the purpose of xenobiotic biotransformation.
What do you mean by reactive metabolites? 2+3

11. Write down the relationship between cell mediated and humoral immunity. 5

12. Write down the types of antigen presenting cells and their roles. 5

13. What is ecotoxicology? Write the concept of it. 2+3

14. Write down the basic structures of human immunoglobulins.

Group - C

Answer any *one* of the following questions : 10×1=10

15. Define active immunity. Describe the passive immunity with an example. What is 'Booster dose' in vaccination and write its importance. 2+(2+1)+2+3

(3)

16. Write down the symptoms of lead and mercury toxicity.
Write down the bio magnification of methylmercury in the ecosystem. 5+5





(4)

OR

[Biostatistics and Bioinformatics]

Group - A

Answer any *five* of the following questions : 2×5=10

1. Write any two features of a biological database.
2. Define median.
3. What do you mean by central tendency?
4. Distinguish between parametric and non-parametric tests.
5. What is null hypothesis?
6. Write any one formula for computing SD for a large sample ($n > 30$).
7. Why histogram is more potent than pie diagram?
8. What is degree of freedom?

Group - B

Answer any *four* of the following questions : 5×4=20

9. What do you mean by data? Differentiate primary data and secondary data. 1+4
10. Compute the mean body weight from the following frequency distribution of body weight (kg) :

Class intervals	51-53	54-56	57-59	60-62	63-65	66-68	69-71
Frequencies	4	7	12	25	13	6	3

(5)



11. What is health informatics? Write the application of health informatics in modern medical sciences. 1+4
12. What is nucleic acid data base? Write notes on GenBank Swiss-Prot. 1+(2+2)
13. What is the significance of alignment in bioinformatics. 2+3

14. What is chi-square test? How the significance of this test is evaluated? 2+3

Group - C

Answer any *one* of the following questions : 10×1=10

15. (i) What are the differences between one tail and two tail t-test?
(ii) Body length (cm) of fishes of a species was obtained from two ponds. Find whether or not there is a significant difference in the mean body length of fish between two ponds. 2+8

Pond A	20	24	20	28	22	20	24	32	24	26
Pond B	12	10	8	10	6	4	14	20	10	6

Critical 't' value :

df	0.05	0.01	0.001
18	2.10	2.87	3.92

16. What is BLAST? Write the important features of BLAST. Describe different types of BLAST. 2+3+5