



বিদ্যাসাগর বিশ্ববিদ্যালয়  
**VIDYASAGAR UNIVERSITY**  
**Question Paper**

**B.Sc. Honours Examinations 2020**

(Under CBCS Pattern)

**Semester - III**

**Subject : NUTRITION**

**Paper : SEC-1T**

**Full Marks : 40**

**Time : 2 Hours**

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

*The figures in the margin indicate full marks.*

**Immunology, Toxicology and Public Health**

Answer any *two* questions from the following :

2×20

1. What do you mean by immunity? Describe 'Innate and Acquired Immunity'. Discuss the types and function of immunoglobulins.
2. Discuss the toxic effects of lead and arsenic. Describe the toxic effects of organochlorine and organophosphate pesticides.
3. Explain the terms 'Bioaccumulation and Biomagnification'. Define BOD and COD. Describe active and passive immunity and differentiate between them. Write the mechanism of cell mediated Immunity and humoral immunity interactions for defensive function of body.

4. What do you mean by genobiotics? State the lethal dose of Toxic substances. What do you mean by target specific toxicity? Define antigen. Write the different types of antigens. Describe different types of antigen-antibody reactions.

**Or**

### **Biostatistics and Bioinformatics**

Answer any *two* questions from the following :

2×20

1. Describe primary and secondary data with their advantages and disadvantages. What is BLAST? Mention its types and features. What is Bioinformatics? Describe its applications.
2. What are Nutrient data bases? How do nucleic acid and protein data bases work? Mention the significance of Multiple Sequence Alignments. Describe Polygenetic tree. What is Health informatics? Mention its application.
3. What is central tendency? Calculate Median and mode using following data—

| Class intervals | Frequency |
|-----------------|-----------|
| 51 — 53         | 5         |
| 54 — 56         | 7         |
| 57 — 59         | 14        |
| 60 — 62         | 28        |
| 63 — 65         | 15        |
| 66 — 68         | 8         |
| 69 — 71         | 3         |

Out of 15 hypertensive human subjects exposed to cold during a cold pressor test, 4 reacted with 10 – 20 mm Hg rise in the diastolic pressure (normoreactors), 9 showed more than 20 mm Hg rise (hyperreactors) and 2 reacted with less than 10 mm Hg rise (hyporeactors). Out of 25 nonhypertensive subjects under similar treatment, 12 were normoreactors, 5 were hyperreactors and 8 were hyporeactors. Is there any significant association between the cold pressor reaction and hypertension? [ $X^2_{.05(2)} = 5.99$  ;  $X^2_{.02(2)} = 7.82$ ]

4. The achievement test scores of 10 students, before and after practice, are given below. Does practice make a significant difference in achievement test scores? [ $t_{0.5(9)} = 2.262$  ;  $t_{0.01(9)} = 4.781$ ]

| Individuals | Achievement scores |                |
|-------------|--------------------|----------------|
|             | Before practice    | After practice |
| 1           | 72                 | 120            |
| 2           | 67                 | 81             |
| 3           | 90                 | 110            |
| 4           | 97                 | 103            |
| 5           | 84                 | 109            |
| 6           | 92                 | 137            |
| 7           | 65                 | 115            |
| 8           | 75                 | 82             |
| 9           | 80                 | 110            |
| 10          | 69                 | 89             |

Explain the term ANOVA. Write down the assumptions of 't test'. Describe Chi Square Tests.p

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