

**RANIRASHMONIGREENUNIVERSITY**

**M.Sc. Fourth Semester Examination, 2025**

**Subject: NUTRITION AND PUBLIC HEALTH**

**COURSE CODE: GNPHT-43**

**(UNIT-1: BIOSTATISTICS AND RESEARCH METHODOLOGY;**

**UNIT-2: BIOINFORMATICS AND NUTRIGENOMICS)**

**Time: 2hrs**

**FM=40**

**Answer any 3 from each unit and two from any unit of your choice from the following questions:**

**8×5=40**

**Unit:1**

1. Briefly state about prevalence and incidence rate. 2.5+2.5
2. Write a short note on Measurements of Central tendency. 5
3. Compute the Pearson's  $r$  between height (cm) and weight (kg) of 9 college students. 5

Student	1	2	3	4	5	6	7	8	9
Height (X)	165	182	170	162	160	165	170	170	165
Weight (Y)	58.5	60.0	52.0	48.5	49.5	59.0	49.0	56.0	58.0

4. Compute the mean and standard deviation of the following age (year) scores of 20 children:  
9,10,12,15,9,11,16,10,13,9,12,10,14,13,15,16,13,10,12,14 5
5. Compute the standard error of mean haemoglobin concentration ( $\text{g.dl}^{-1}$ ) of the following data: 5

Men	14.2	14.6	14.8	14.0	13.7	14.8	14.6	13.8	14.0	14.9	15.0
Women	12.4	12.8	12.6	13.1	12.5	12.9	13.4	14.2	12.9	12.2	

6. Write Short Note on any two of the following: 2.5×2
  - a) Attack rate
  - b) Diagnostic test and screening test.
  - c) Population and sample in statistics?
  - d) Mortality Rate

## Unit2

7. What is the role of bioinformatics in biological science? 5
8. What is the importance of multiple sequence alignment? 5
9. Explain the role of carbohydrate on gene expression. 5
10. Write down the short note on Nutraceuticals. 5
11. Explain the relation between Nutrigenomics and Nutrigenetics. 5
12. Write short Note on any two of the following: 2.5×2
  - a) Local alignment
  - b) Global alignment
  - c) BLAST
  - d) Orthologous and paralogous genes