

Ph.D. IN FOOD AND NUTRITION (PHDFN)

Term-End Examination

00072

December, 2017

**RFN-001 : RESEARCH METHODS AND
BIostatISTICS**

Time : 3 hours

Maximum Marks : 100

Note : Answer *five* questions in all. All questions carry equal marks. Question no. 1 is **compulsory**.

1. (a) Match the items in Column A with the items in Column B : 5

<i>Column A</i>	<i>Column B</i>
i. ANOVA	1. Prediction
ii. Chi-Square	2. Correlation
iii. Regression	3. One-way analysis of Variance
iv. Pearson's Coefficient	4. Testing difference in central tendencies
v. T-test	5. Testing difference between two independent groups
	6. Inference about frequencies

(b) Indicate, what these symbols represent : 5

- (i) σ
- (ii) μ
- (iii) r
- (iv) Q_1
- (v) Σ
- (vi) σ^2
- (vii) S
- (viii) χ^2
- (ix) \bar{x}
- (x) $P(A)$

(c) Explain the following in 2 – 3 sentences each : 10

- (i) Standard error of mean
- (ii) Degree of freedom
- (iii) Two-tail test
- (iv) Level of significance
- (v) Null hypothesis

2. A researcher wants to study the impact of a training programme designed to improve nutritional status and knowledge of workers in an institution.

Design a research proposal with the following components :

- | | | |
|-----|---|---|
| (a) | Title/Statement of research proposal | 2 |
| (b) | Research objectives | 5 |
| (c) | Methodology (including research design, sampling, etc.) | 5 |
| (d) | Research instruments (tools and techniques) | 6 |
| (e) | Research analysis | 2 |
- 3. Explain the following briefly :** **4×5=20**
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|-----|--|--|
| (a) | Advantages and limitations of correlation studies in nutrition epidemiology. | |
| (b) | Issues in the design of case-control studies. | |
| (c) | Use and process of stratified sampling in research. | |
| (d) | Characteristics of a good sample. | |
- 4. (a)** "Interview is an important research tool, but it is not without limitations." Comment on the statement, highlighting the limitations of interview method. **6**
- | | | |
|-----|--|---|
| (b) | Justify the uses of a questionnaire as an important tool for data collection. | 7 |
| (c) | Enumerate the uses of documents as a data collection tool in nutrition research. | 7 |

5. (a) The weight scores (kg) of 7 boys and 10 girls is presented herewith :

Boys :	13, 14, 11, 12, 15, 13, 13
Girls :	10, 16, 12, 13, 18, 13, 19, 14, 13, 12

Calculate the mean, standard deviation and t-value for the data. 2+2+8

- (b) Distribution of male and female subjects in terms of positive or negative attitude towards breast feeding is presented herewith :

	Positive Attitude	Negative Attitude
Females	7	5
Males	9	6

Infer whether there is a difference in the attitude of males and females, using appropriate statistical test. 8

6. Write short notes on any *four* of the following : 4×5=20

- (a) Measures of Relationship
- (b) Representation of Frequency Distribution
- (c) Uses of Qualitative Data
- (d) Normal Probability Distribution
- (e) Statistical Inferences from Relative Risk and Odds Ratio