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MFN-009

**MASTER OF SCIENCE
(DIETETICS AND FOOD SERVICE
MANAGEMENT)
[M. SC. (DFSM)]**

Term-End Examination

June, 2026

**MFN-009 : RESEARCH METHODS AND
BIOSTATISTICS**

Time : 3 Hours

Maximum Marks : 100

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

1. (a) Give one example each for the following variables in the context of the health of the community : 5
- (i) Social variable
 - (ii) Health related outcome variable
 - (iii) Continuous variable
 - (iv) Stochastic variable
 - (v) Quantitative variable
- (b) In nutritional epidemiology enlist any *five* types of research which can be undertaken. 5
- (c) What do you understand by the term 'Ethics' in research ? List any *three* code of ethics you will observe as a researcher. 2+3

- (d) What is meant by the term 'plagiarism' ? Enlist any *three* activities as part of your work that will be covered as plagiarism. 2+3
2. (a) Differentiate between 'objectives' and 'hypothesis' for a study giving suitable examples. 5
- (b) Elaborate on the different forms of hypothesis used in nutritional epidemiological research with the help of suitable examples. 10
- (c) Enumerate the different aspects you would consider while deciding on the sample size for a study. 5

3. (a) Present a brief review on descriptive studies used in research highlighting their uses and limitations. 10
- (b) Discuss the different types and importance of experimental interventional studies in epidemiological research giving suitable examples. 10
4. Today the incidence of 'Metabolic Syndrome' is arising among young individuals/workers in urban areas. You have to find the common cause, clinical/biochemical symptoms and implement an intervention programme for these individuals. Develop a research proposal with the following elements :
- (a) Title of the research study 2

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|--|---|
| (b) Research objectives/hypothesis | 3 |
| (c) Sample, sample size and sampling technique | 5 |
| (d) Research design | 2 |
| (e) Locale of study | 1 |
| (f) Tools and techniques for data collection | 5 |
| (g) Statistical tools for analysis | 2 |
5. (a) Explain the different ways in which nominal and ordinal data can be graphically represented in a research study. 10
- (b) What are non-parametric tests ? Discuss any *one* non-parametric test you may use for research purpose. 3+7

6. Given below is the data related to weight (kg) recorded for 20 youth who reported for recruitment in the army :

60	70	81	56	76
48	95	78	62	50
62	59	75	88	49
57	65	79	53	66

- (a) Prepare a frequency table and histogram for the data. 6
- (b) Calculate the mean, median, mode and range for the set of data. 2+2+2+2
- (c) Calculate the variance and standard deviation. 6
7. (a) Illustrate and explain the characteristics of normal probability distribution. 10

- (b) Calculate the product-moment correlation (r) for the following set of data for the two variables X (Hb level, gram/dl) and Y (weight, kg) for 10 subjects (women) : 10

X	Y
8	40
11	45
12	58
9	55
7	38
5	30
13	65
10	62
12	43
6	35

8. Write short notes on any *four* of the following : 5+5+5+5

- (a) Use of relative risk and odds ratio in research
- (b) Design, use of attitude scale for qualitative research
- (c) Common measures of mortality
- (d) Sampling techniques in research
- (e) Factorial analysis.

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