

No. of Printed Pages : 4

MFN-009

**MASTER OF SCIENCE (DIETETICS AND
FOOD SERVICE MANAGEMENT)**

Term-End Examination

December, 2011

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

Time : 3 hours

Maximum Marks : 100

Note : *Question No. 1 is compulsory. Answer five questions
in all.*

1. (a) Define the following : 10
- (i) Science
 - (ii) Population
 - (iii) Qualitative Data
 - (iv) Discrete variable
 - (v) Sampling Frame
- (b) Give one example for each of the following : 5
- (i) Declarative Hypothesis
 - (ii) Ordinal Scale
 - (iii) Close Ended Question
 - (iv) Graphic Scale
 - (v) Unstructured Interview

(c) Fill in the Blanks :

5

- (i) Qualitative Data are _____ materials.
- (ii) Data are either _____ or _____
- (iii) _____ is the middle value in a distribution.
- (iv) Negative predictive is the probability that a human being is not infected when _____ test result is observed.
- (v) Positive _____ of variance is the standard deviation.

2. Breast Cancer is a major problem among the women in India. As a researcher, you have to study the breast cancer cases in your district. Design a research proposal with the following points :

- (a) Define the research problem 2
- (b) Research objectives of the study 5
- (c) Population, Sample and Method of Sampling. 3
- (d) Research Method 5
- (e) Hypothesis 2
- (f) Method of Data collection 3

3. Explain the following briefly giving suitable examples : 5+5+5+5
- (a) Quasi Experimental Design
 - (b) Characteristics of Good Research Tool
 - (c) Non Probability Sample
 - (d) Points to consider while developing a research design.
4. Differentiate between the following : 6+6
- (a) Research tools giving appropriate examples :
 - (i) Documents and official Records.
 - (ii) Standardized tests and Teacher Made Tests.
 - (b) Differentiate between the following 4+4 sampling methods with appropriate examples.
 - (i) Cluster Sampling and Multi-stage sampling.
 - (ii) Purposive Sample and Incidental Sample.
5. Marks obtained by 8 Boys in Nutrition and Food Science is as follows : 20
- Nutrition : 35, 40, 46, 32, 31, 54, 60, 62
- Food Science : 61, 36, 41, 47, 23, 39, 59, 55
- Find out the product moment correlation for the above two variables.

6. (a) Explain the three main types of observational study. 6
- (b) Explain the three characteristics of experimental research. 6
- (c) Explain the various methods of non-probability samples. 8
7. Compute mean, median, mode, variance and standard deviation for the following frequency distribution 20

C. I	f
195 - 199	1
190 - 194	2
185 - 189	4
180 - 184	5
175 - 179	8
170 - 174	6
165 - 169	4

8. Write short notes on *any four* of the following 5+5+5+5
- (a) Parametric Tests
- (b) Characteristics of Good hypothesis
- (c) Cross Sectional Study
- (d) Main Steps for Experimental Research.
- (e) Representativeness of Sample.

**MASTER OF SCIENCE (DIETETICS AND
FOOD SERVICE MANAGEMENT)**

Term-End Examination 01961
June, 2012

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

Time : 3 hours

Maximum Marks : 100

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

1. (a) Define the following : 10
- (i) Research
 - (ii) Hypothesis
 - (iii) Variable
 - (iv) Prevalence
 - (v) Placebo
- (b) Give one example of each of the following : 5
- (i) Nominal scale
 - (ii) Discrete variable
 - (iii) Null Hypothesis
 - (iv) Open ended question
 - (v) Non-parametric test

(c) Fill in the blanks :

5

- (i) Measures which are estimated from the samples are called _____.
- (ii) _____ is a technique of collecting data by observing activities of individuals in different settings, by talking to them, or studying their constructive or creative products.
- (iii) _____ diagram and line diagram are the two graphs for studying the relationship between two variables.
- (iv) _____ is a measure of the distance in standard deviations of a sample from the mean.
- (v) A complete, accurate and up-to-date list of all the units in a population is called a _____ flame.

2. Undernutrition is a significant health problem among children below 5 years in India. Formulate a research proposal to assess the problem of undernutrition among children below 5 years of age in your district covering the following aspects :

- (a) Statement of research problem 2
- (b) Research objectives, hypothesis 5
- (c) Research design (including study design and sample design) 7
- (d) Collection of data (tools, techniques) 4
- (e) Analysis and Interpretation of data 2

3. Differentiate between the following giving suitable examples :
- (a) Histogram and Bar chart 5
 - (b) Qualitative and Quantitative data 5
 - (c) Sensitivity and Specificity of a tool 5
 - (d) Random and Systematic error 5
4. Explain the following briefly giving suitable examples :
- (a) Normal distribution 5
 - (b) Probability sampling 5
 - (c) Purpose of correlational studies 5
 - (d) Characteristics of a good sample 5
5. (a) Following is the frequency distribution of test scores of 40 students. 15

<u>Class Intervals</u>	<u>Frequency</u>
35 - 39	4
30 - 34	8
25 - 29	11
20 - 24	8
15 - 19	6
10 - 14	3

Indicate any one type of diagram that would be appropriate to present the given data. Present the data diagrammatically. Give a suitable title to the diagram.

- (b) In a sample of 100 children 1 - 3 year of age, mean (SD) intake of calcium = 175 (5.82) mg. Compute the standard error of mean. 5
6. (a) Enlist *any two* strengths of the following : 4
- (i) Research design
- (ii) Systematic sampling method
- (b) What issues would you keep in mind in the design and conduct of intervention studies ? 8
- (c) What is the objective of conducting a cohort study ? How is it different from a case-control study ? 8
7. The following table shows the age distribution of cases of a disease reported during a year in a particular state. 20

Age (years)	No.of cases
5 - 14	5
15 - 24	10
25 - 34	20
35 - 44	22
45 - 54	13
55 - 64	5
Total = 75	

Compute the sample mean, median, variance and standard deviation.

8. Write short notes on *any four* of the following :
- (a) Measures of variability 5+5+5+5
 - (b) Significance of 'Relative Risk' and 'odds Ratio' in nutritional epidemiology.
 - (c) Purposes of case studies
 - (d) Uses and limitations of rating scales
 - (e) Ensuring the quality of data
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No. of Printed Pages : 6

MFN-009

**MASTER OF SCIENCE (DIETETICS AND
FOOD SERVICE MANAGEMENT)**

Term-End Examination 02288
December, 2012

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

Time : 3 hours

Maximum Marks : 100

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

-
1. (a) Define the following : 10
- (i) Epidemiology
 - (ii) Null Hypothesis
 - (iii) Reliability
 - (iv) Population
 - (v) Independent Variable
- (b) Give one example of each of the following : 5
- (i) Ordinal scale
 - (ii) Alternative hypothesis
 - (iii) Continuous variable
 - (iv) Close ended question
 - (v) Graphic scale

- (c) Fill in the blanks : 5
- (i) Measures which describe a population are called _____ .
 - (ii) _____ is a small proportion of a population selected for analysis.
 - (iii) _____ scale is the most elementary scale of data measurement which labels object of measurement.
 - (iv) _____ is the measure of the likelihood of an event.
 - (v) An _____ is a technique for assessing ability, personality etc. in a face - to - face situation based on information provided verbally by the subject.
2. A researcher wants to assess the impact of diet and lifestyle changes in the management of hypertension. Plan a research study covering the following aspects :
- (a) Statement of research problem 2
 - (b) Research objectives, hypothesis 5
 - (c) Research design (including study design and sample design) 7
 - (d) Collection of data (tools, techniques) 4
 - (e) Analysis and interpretation of data 2

3. Differentiate between the following giving suitable examples :
- (a) Simple random sampling and Stratified random sampling 5
 - (b) Parametric and Non - Parametric data 5
 - (c) Cohort and Case - Control studies 5
 - (d) Descriptive and Analytical cross - sectional studies 5
4. Explain the following briefly giving suitable examples :
- (a) Sampling frame 5
 - (b) Objectives of the research problem 5
 - (c) Double blind trial 5
 - (d) Level of significance 5
5. (a) In a study of the relationship between angular stomatitis and occupation, the occupation of each individual was recorded as : 15
- as :
- P (Professional), S (Skilled) or U (Unskilled). There were 88 people with angular stomatitis and 100 without the disease. The distribution of 188 people by occupational classification and angular stomatitis is as follows :

Occupation	Angular stomatitis		Total
	Present	Absent	
Professional	5	20	25
Skilled	13	30	43
Unskilled	70	50	120
Total	88	100	188

Indicate any one type of diagram that would be appropriate to present the given data. Present the data diagrammatically. Give a suitable title to the diagram and label it.

- (b) On the basis of the bivariate data given below, calculate the relative risk of infant death in pregnancies with weight gain of less than 7 kg during pregnancy. 5

Infant outcome	Weight gain during pregnancy		Total
	< 7 kg	≥ 7kg	
Dead	181	36	217
Alive	1666	651	2317
Total	1847	687	2534

6. (a) Enlist any two strengths and two limitations of the following research tools : 5
- (i) Questionnaires
- (ii) Rating scales
- (b) What is a reference value ? Give two examples of any reference / normal values you may have come across in your field of study. 5

- (c) What is the importance of intervention studies in analytic epidemiologic research ? 10
List the issues you would keep in mind in the design and conduct of intervention studies.
7. (a) The following are the fasting blood glucose levels of a sample of children. 16

No.	Value
1	56
2	62
3	63
4	65
5	65
6	65
7	65
8	68
9	70
10	72

Compute mean median, mode, range, variance and standard deviation for the given data.

- (b) A single 6 sided dice is rolled. What is the probability of getting an even number on rolling the dice ? 4

8. Write short notes on *any four* of the following : 5+5+5+5
- (a) Scope of research in nutrition
 - (b) Characteristics of a good research tool.
 - (c) Indicators of Morbidity
 - (d) Uses and limitations of attitude scales
 - (e) Characteristics of normal distribution curve.
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No. of Printed Pages : 4

MFN-009

**MASTER OF SCIENCE (DIETETICS AND
FOOD SERVICE MANAGEMENT)**

Term-End Examination

June, 2013

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

Time : 3 hours

Maximum Marks : 100

Note : *Question No. 1 is compulsory. Answer five questions
in all.*

- 1. (a) Define the following : 10**
- (i) Research
 - (ii) Hypothesis
 - (iii) Validity
 - (iv) Qualitative Data
 - (v) Epidemiology
- (b) Give one example for each of the following : 5**
- (i) Null Hypothesis
 - (ii) Structured Question
 - (iii) Total population
 - (iv) Ratio scale
 - (v) Purposive Sample

- (c) Fill in the blanks : 5
- (i) Probability sampling is based on _____ selection.
 - (ii) Hypothesis should be started as _____ and _____ .
 - (iii) Chi - square is an example of _____ test.
 - (iv) Correlational studies are used to look _____ between variables.
 - (v) Case studies are conducted with _____ purpose.

2. "Malnutrition in children of age group one to five is a major problem in India". You are asked to study this problem in your city. Develop a research proposal with the following points.

- (a) Title of the Research study 2
- (b) Research objectives 3
- (c) Sample and Sampling Technique 5
- (d) Research Method 3
- (e) Research Tools 5
- (f) Method of Data Collection 2

3. Explain the following briefly giving suitable examples :

- (a) Usability of tool 5
- (b) Ordinal scale 5
- (c) Characteristics of good sample 5
- (d) Standardized test 5

4. (a) Differentiate between the following research tools giving appropriate examples : 6+6
- (i) Structured questionnaire and unstructured questionnaire.
 - (ii) Documents and Records.
- (b) Differentiate between the following research methods with appropriate examples : 4+4
- (i) Participant observation and Non-participant observation.
 - (ii) Structured Interview and unstructured Interview.
5. Find out the product moment co-relation for the following two variables at 0.05 level of significance. 20
- | | | | | | | | |
|--------|---|----|----|----|----|----|----|
| Age | : | 46 | 50 | 52 | 49 | 35 | 45 |
| Weight | : | 50 | 45 | 44 | 60 | 42 | 36 |
6. (a) Explain how will you ensure the quality of data in research studies ? 6
- (b) Explain how will you observe the behaviour of a person to collect data for research. 6
- (c) Describe the limitations of the Interview method for collecting data. 8
7. Calculate mean, median, mode and standard deviation for the following ungrouped data. 20
- 20, 25, 16, 3, 10, 5, 9, 21, 14, 7

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

- (a) True Experimental Design 5+5+5+5
 - (b) Characteristics of case study
 - (c) Cross sectional study
 - (d) Non - parametric tests
 - (e) Incidental sample
-



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No. of Printed Pages : 3

MFN-009

**MASTER OF SCIENCE (DIETETICS AND
FOOD SERVICE MANAGEMENT)**

Term-End Examination

December, 2013

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

Time : 3 hours

Maximum Marks : 100

Note : Question No. 1 is compulsory. Answer five questions.

1. (a) Define the following : 10
- (i) Variables
 - (ii) Sample
 - (iii) Reliability
 - (iv) Sampling Frame
 - (v) Quantitative Data
- (b) Give one example for each of the following : 5
- (i) Hypothesis
 - (ii) Unstructured question
 - (iii) Sample Population
 - (iv) Rating Scale
 - (v) Unstructured observation
- (c) Fill in the blanks :
- (i) Non probability sampling is based on _____ of the researcher. 5
 - (ii) Hypothesis provide _____ to research.
 - (iii) Optimum sample fulfills the requirement of _____.
 - (iv) A _____ is a group of people who share a common experience.
 - (v) Y represent the measure of _____ variable.

2. Tuberculosis is one of the common diseases in India. You are asked to study the status of this disease in your district. Develop a research proposal with the following points.
 - (a) Title of the Research study 2
 - (b) Research objectives 3
 - (c) Sample and Sampling Technique 5
 - (d) Research Method 3
 - (e) Research Tools 5
 - (f) Method of Data collection 2

3. Explain the following briefly giving suitable examples.
 - (a) Reliability of tool 5
 - (b) Nominal scale 5
 - (c) Sampling size 5
 - (d) Nonstandardized Test 5

4. (a) Differentiate between the following Research tools giving appropriate examples. 6+6
 - (i) Numerical Scale and Graphical Scale
 - (ii) Imbert Scale and Thurstone Scale
 (b) Differentiate between the following research methods with approximate examples. 4+4
 - (i) Journal and Records
 - (ii) Interview and Observation

5. Find out the product moment correlation for the below two variables at 0.05 level of significance. 20

Dietetics : 40, 35, 32, 21, 43, 22

Biostatistics : 42, 34, 29, 15, 45, 16

6. (a) Describe the various types of documents. 6
 (b) State the characteristics of a good sample. 6
 (c) Write the steps involved in conductivity experimental research. 8

7. Given below is the data related to number of male and female students who have passed or failed nutrition test. 10+10

	Pass	Fail
Female	30	20
Male	25	15

- (a) Test whether the exam differentiate between male and female students at 0.05 level of significance.
- (b) Calculate the odds ratio of pass female students as compared to male students.

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

- (a) Quasi Experimental Design 5+5+5+5
- (b) Main steps for case study
- (c) Cohort Study
- (d) Parametric tests
- (e) Sampling Techniques
-

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MFN-009

MASTER OF SCIENCE (DFSM)

Term-End Examination

June, 2014

MFN-009 : RESEARCH METHODS AND BOSTATICS

Time : 3 hours

Maximum Marks : 100

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

1. (a) Define the following. 10
- (i) Research
 - (ii) Nutrigenomics
 - (iii) Alternate Hypothesis
 - (iv) Cohort
-
- (v) Population
- (b) Give one example of each of the following. 5
- (i) Numerical Scale
 - (ii) Structured Questionnaire
 - (iii) Individual Test
 - (iv) Participant Observation
 - (v) Histogram

(c) Fill in blanks: 5

(i) relates to the relevance of a content of a research tool.

(ii) Complete, accurate list of all the units in a population is called

(iii) In sampling the units of the population are not selected at the discretion of the researcher.

(iv) is a test to measure the individuals concepts after intervention.

(v) Hypothesis should provide to research.

2. A researcher wants to study the causes of night blindness in children in the age group 1 to 5 in his/her state. Design a research proposal with following components:

(a) Statement of research problem. 2

(b) Research objectives. 5

(c) Research Design (methodology, population and sample). 6

(d) Research Instruments. 5

(e) Research Analysis. 2

3. Differentiate between the following giving suitable examples :

- (a) Independent and dependent variable. 5
- (b) Stratified and systematic sampling. 5
- (c) Purposive sample and Incidental sample. 5
- (d) Interval Scale and Ratio Scale. 5

4. Explain the following briefly giving examples:

- (a) Data Processing 5
- (b) Halo-effect 5
- (c) Biased Sample 5
- (d) Case Study 5

5. (a) Compute mean, median and mode for the following frequency distribution 12

CI	F.
150-144	5
145-139	3
140-134	9
135-129	2
130-124	6
125-119	2

- (b) The fasting Glucose level in the blood of 8 children in std x I is given below. Calculate standard deviation of the fasting blood glucose level. 8

Fasting Blood Glucose Level (mg/dl)

90

120

115

80

113

140

125

150

-
6. (a) Enlist any two strengths and two limitations of the following research tools 10

- (i) Interview
- (ii) Observation tools

- (b) List the various designs of experimental study. Differentiate between any two types. 10

7. (a) Compute the product moment 'r' from the two variables i.e. marks obtained by students in physics (x) and marks in math (y)

x 40 45 30 62 70 26 35 43 60

y 32 26 46 63 52 41 50 39 45

- (b) Describe the two graphs which are made to represent the relation between two variables. 4+4

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

- (i) Purpose of Epidemiology. 5x4=20
- (ii) Discrete variables.
- (iii) Migrant studies in nutrition.
- (iv) Stages of Research Process.
- (v) Validity of Research.

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MFN-009

**MASTER OF SCIENCE (DIETETICS AND
FOOD SERVICE MANAGEMENT)**

Term-End Examination

December, 2014

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

Time : 3 hours

Maximum Marks : 100

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

1. (a) Define the following : 10
- (i) Non-Parametric Tests
 - (ii) Epidemiology
 - (iii) Null hypothesis
 - (iv) Probability
 - (v) Sample
- (b) Give one example of each of the following : 5
- (i) Rating Scale
 - (ii) Questionnaire
 - (iii) Types of Tests
 - (iv) Observation Technique
 - (v) Frequency Distribution Graph
- (c) Fill in the blanks : 5
- (i) _____ is the extent to which a test measures relatively abstract constructs.
 - (ii) Sample that is not representative is known as _____.
 - (iii) Non-probability sample is based on _____ of the researcher.
 - (iv) _____ is a test to measure the individuals concepts before the intervention.
 - (v) Hypothesis should be _____.

2. A researcher wants to study the causes of diarrhoea during summers in preschool children in his/her area. Design a research proposal with following components :
- (a) Statement of research problem 2
 - (b) Research objectives 5
 - (c) Research Design (Methodology, Sample) 6
 - (d) Research Instruments 5
 - (e) Research Analysis 2
3. Differentiate between the following giving examples.
- (a) Experimental Group and Control Group 5
 - (b) Cluster Sampling and Multistage Sampling 5
 - (c) Incidental Sample and Quota Sample 5
 - (d) Ordinal Scale and Metric Scale 5
4. Explain the following briefly giving suitable examples.
- (a) Coding of Data 5
 - (b) Document 5
 - (c) Sampling Frame 5
 - (d) Cross-sectional Study 5
5. (a) Compute mean, median, mode for the following frequency distribution. 4+4+4

CI	F
50-44	9
45-39	6
40-34	3
35-29	8
30-24	0
25-19	7

- (b) The Haemoglobin value in the blood of 8 children in std. XI is given below. Calculate the standard deviation and variance of the Haemoglobin values.

Haemoglobin (g/dl)

9.0

12.0

11.5

8.0

11.3

14.0

12.5

15.0

6. (a) Enlist any two strengths and two limitations of the following research tools : 10

(i) Official Records

(ii) Journals

- (b) Describe the characteristics of a good questionnaire. 10

7. (a) Compute the product moment 'r' from the two variables i.e. height in cm (x) and weight in kg (y) of girls. 12

(x)	130	127	142	136	150	152
(y)	50	45	62	45	52	65

- (b) Describe the two graphs to represent the Nominal and Ordinal data. 4+4

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

(a) Parametric Tests

5+5+5+5

(b) Stochastic Variables

(c) Controlled Trials

(d) Normal Probability Distribution

(e) Reliability of Research Tool.

No. of Printed Pages : 3

MFN-009

**MASTER OF SCIENCE (DIETETICS AND
FOOD SERVICE MANAGEMENT) (M.Sc. DFSM)**

Term-End Examination

June, 2015

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

Time : 3 hours

Maximum Marks : 100

- Note :** (i) *Question No. 1 is compulsory.*
(ii) *Answer five questions in all.*
(iii) *All questions carry equal marks.*

-
1. (a) Define the following : 10
- (i) Epidemiology
 - (ii) Variable
 - (iii) Quantitative Data
 - (iv) Probability Sampling
 - (v) Population
- (b) Give one example for each of the following : 5
- (i) Demographic Variable
 - (ii) Rating Scale
 - (iii) Individual Test
 - (iv) Graph for Nominal Data
 - (v) Graph for relation between two variables
- (c) If x_1, x_2, \dots, x_{10} are 10 natural numbers. 5
Calculate the mean, median and standard deviation for the above values.

2. "Child sex ratio shows that girls are disappearing in India". You have to study the reasons for this in your state. Develop a research proposal with the following points :

(a)	Title of the Research Study	2
(b)	Research Objectives	3
(c)	Sample and Sampling Techniques	5
(d)	Research Design	3
(e)	Research Instruments	5
(f)	Method of Data Collection	2

3. Explain the following in brief :

(a)	Statistical Hypothesis	5
(b)	Cohort Study	5
(c)	Nominal Scale	5
(d)	Rating Scale	5

4. (a) Differentiate between the following research designs :

(i)	Pre - experimental and Time experimental	5
(ii)	One group Pre-test Post-test Design and static group comparison	5

- (b) Differentiate between the following research tools :

(i)	Participant observation and non-participant observation	5
(ii)	Standardized test and non-standardised test	5

5. Following values were obtained when 5 females and 7 males were tested for Haemoglobin in blood. 20
Female : 10, 11, 9, 12, 13
Male : 9, 10, 11, 12, 14, 13, 8
Is the difference between the mean scores of the males and the females significant at 5% level of significance ?
6. (a) Describe the use of Journals in collecting data for research. 6
(b) Describe how will you ensure the quality of data. 6
(c) Describe the issues in the design and conduct of clinical trials. 8
7. (a) Given below is the distribution of weight of ten adolescents girls : 10
Weight : 36, 40, 42, 38, 47, 50, 33, 52, 41, 46
Calculate the variance and standard deviation from the above data.
(b) The theory and practical marks for 10 students are given here with : 10
Theory (X) : 45 54 52 58 62 46 55 49 50 54
Practical (Y) : 42 50 55 46 59 41 46 48 45 48
Find the correlation coefficient between X and Y.
8. Write short notes on any four of the following :
(a) Characteristics of case study method 5+5+5+5
(b) Stratified Sampling
(c) Content Validity
(d) Advantages of Questionnaire
(e) Numerical Scale
-

No. of Printed Pages : 4

MFN-009

**MASTER OF SCIENCE (DIETETICS AND
FOOD SERVICE MANAGEMENT)**

Term-End Examination

December, 2015

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

Time : 3 hours

Maximum Marks : 100

Note : (i) Question No. 1 is *compulsory*.

(ii) Answer *five* questions in *all*.

(iii) All questions carry *equal* marks.

1. (a) Define the following : 10

(i) Nutritional Epidemiology

(ii) Biostatistics

(iii) Qualitative Data

(iv) Non-Probability Sampling

(v) Sample

(b) Graphically represent each of the following :

2+2+2+2+2

(i) Stem and Leaf plot

(ii) Altitude Scale

(iii) Box and Wishker's plot

(iv) Frequency Polygon

(v) Bar Diagram

2. "Large number of people are suffering from cancer". You have to find the common causes of cancer in your state. Develop a research proposal with the following points :

(a)	Title of the research study	2
(b)	Research Objectives	3
(c)	Sample and Sampling Technique	5
(d)	Research Design	3
(e)	Research Instruments	5
(f)	Method of Data Collection	2

3. Explain the following in brief :

(a)	Null Hypothesis	5
(b)	Case Control Study	5
(c)	Ordinal Scale	5
(d)	Altitude Scale	5

4. (a) Differentiate between the following research designs :

(i)	Factorial Design and Time Series	5
(ii)	Quasi Experimental Design and Time Series Design	5

- (b) Differentiate between the following research tools :

(i)	Structured interview and unstructured interview.	5
(ii)	Structured questionnaire and unstructured questionnaire.	5

5. (a) Compute median and mode for the following distribution : 10

C.I.	f
71-75	3
66-70	2
61-65	7
56-60	5
51-55	6
46-50	1
41-45	4

- (b) The weight of vegetarian and non-vegetarian female subjects are given here : 10

Vegetarian (X)	42	50	55	46	59	41	46	48	45	48
Non-Vegetarian (Y)	45	54	52	58	62	46	55	49	50	54

Test whether there is any significant difference between the mean weight of two groups at 5% level of significance.

6. (a) Describe the use of official records in collecting data for research. 6
- (b) Describe the common measures of mortality used in clinical research. 6
- (c) Describe the statistical methods you would use for analysis of qualitative data. 8
7. (a) Given below is the distribution of Height of eight school going boys in cms. 10
Height : 165, 140, 151, 145, 160, 138, 142, 158
Calculate the variance and standard deviation from the above data.
- (b) Briefly explain the different methods of sampling commonly used in epidemiological research. 10

8. Write short notes on **any four** of the following :
- (a) Main steps to conduct case study 5+5+5+5=20
 - (b) Confidence intervals and Level of significance
 - (c) Non-Parametric Tests
 - (d) Normal Probability Distribution
 - (e) Graphic Scale
-



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MFN-009

02603

**MASTER OF SCIENCE (DIETETICS AND
FOOD SERVICE MANAGEMENT) (M.Sc. DFSM)**

Term-End Examination

June, 2016

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

Time : 3 hours

Maximum Marks : 100

- Note :**
- (i) *Question No. 1 is compulsory.*
 - (ii) *Answer five questions in all.*
 - (iii) *All questions carry equal marks.*

-
1. (a) Define the following : 10
- (i) Parametric Test
 - (ii) Variance
 - (iii) Discrete Variable
 - (iv) Sampling Design
 - (v) Population
- (b) Give one example for each of the following : 5
- (i) Determinant
 - (ii) Demographic Variable
 - (iii) Research Tool
 - (iv) Sampling Technique
 - (v) Test of Mental Ability
- (c) List the main limitations of correlational studies. 5

2. "Lung Cancer is becoming common due to several reasons". Develop a research proposal to find out the reasons of lung cancer in your state. Proposal should include following points :

(a) Title of the Research Study	2
(b) Research Objectives	3
(c) Sample and Sampling Technique	5
(d) Research Design	3
(e) Research Instruments	5
(f) Method of Data Collection.	2

3. Explain the following in brief :

(a) Official Records	5
(b) Use of Rating Scale	5
(c) Content Validity	5
(d) Uses of Questionnaire	5

4. Differentiate between the following sets of terms :

(a) Nominal Scale and Ordinal Scale	5
(b) Histogram and Frequency Polygraph	5
(c) Structured Interview and Unstructured Interview	5
(d) Participant observation and Non-participant observation	5

5. Compute mean, median and mode of the following frequency distribution : 20

C.I.	f
71 - 75	5
66 - 70	8
61 - 65	4
56 - 60	3
51 - 55	2
46 - 50	6
41 - 45	1

6. (a) Describe the advantages of formulating a research design. 6
 (b) Describe the strengths of using case study method in research. 6
 (c) Write the sources of data in the design of short studies. 8

7. (a) 8 females and 6 male students enrolled in MFN course obtained the following score : 10

Female : 30 42 50 35 64 48 62 33

Male : 34 44 58 60 38 47

Calculate significance of difference between the mean scores of the females and the males.

- (b) The theory and practical marks of 10 students are given below : 10

Theory (x) : 24 34 33 22 37 23 38 33 44 35

Theory (y) : 15 21 28 31 18 24 36 32 27 18

Find the correlation coefficient between x and y .

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

- (a) Data Processing 5+5+5+5
 - (b) External Criticism of Documents
 - (c) Normal Probability Distribution
 - (d) Uses of Rating Scales
 - (e) Non-parametric tests
-



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No. of Printed Pages : 4

MFN-009

**MASTER OF SCIENCE (DIETETICS AND
FOOD SERVICE MANAGEMENT) (M.Sc. DFSM)**

Term-End Examination

December, 2016

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

Time : 3 hours

Maximum Marks : 100

- Note :**
- (i) *Question No. 1 is compulsory.*
 - (ii) *Answer five questions in all.*
 - (iii) *All questions carry equal marks.*

- 1. (a) Define the following : 10**
- (i) Non - Parametric Test
 - (ii) Standard Deviation
 - (iii) Continuous Variable
 - (iv) Observational Design
 - (v) Sample
- (b) Give one example for each of the following : 5**
- (i) Graph for nominal data
 - (ii) Analytical studies
 - (iii) Types of Hypotheses
 - (iv) Representation of Frequency distribution
 - (v) Test of Achievement
- (c) List the strengths of cross - sectional studies. 5**

2. "Malnutrition in children is commonly seen in villages." Develop a research proposal to study the status of Malnutrition in any one village of your district. Outline the following points of the research proposal :

(a)	Title of the Research study	2
(b)	Research objectives	3
(c)	Sample and Sampling Technique	5
(d)	Research Design	3
(e)	Research Instruments	5
(f)	Method of Data collection	2

3. Explain the following in brief : 5+5+5+5

- (a) Journals - Research guide for Researcher
- (b) Limitation of Rating scale
- (c) Construct Validity
- (d) Limitations of Questionnaire

4. Differentiate between the following sets of terms : 5+5+5+5

- (a) Power vs. Speed Test
- (b) Paper pencil and Performance Test
- (c) Qualitative Data and Quantitative data
- (d) Structured Questionnaire and Unstructured questionnaire

5. Compute mean, median and mode of the following frequency distribution : 20

CI	f
71 - 75	3
66 - 70	1
61 - 65	6
56 - 60	5
51 - 55	2
46 - 50	9
41 - 45	4

6. (a) Write the points you will keep in mind while developing a research design. 6
- (b) Write the sources from where information is obtained for descriptive studies. 6
- (c) Describe the principle in selection of comparison groups. 8
7. (a) 8 Females and 6 Males enrolled in MFM Course and obtained the following score : 10

Female	30	42	50	35	64	48	62	33
Male	34	44	58	60	38	47		

Calculate the significance of difference between the mean scores of the females and the males.

- (b) The theory and practical marks for 10 students are given below : 10

Theory (X)	24	34	33	22	37	23	38	33	44	35
Theory (Y)	15	21	28	31	18	24	36	32	27	18

Find the correlation coefficient between X and Y.

8. Write short notes on **any four** of the following : 5+5+5+5
- (a) Coding of Data
 - (b) Measures of Variability
 - (c) Relative Risk and Odds Ratio
 - (d) Limitations of Rating scale
 - (e) Multistage sampling
-



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MFN-009

**MASTER OF SCIENCE (DIETETICS AND
FOOD SERVICE MANAGEMENT) (M.Sc. DFSM)**

Term-End Examination

June, 2017

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

Time : 3 hours

Maximum Marks : 100

- Note :*
- (i) *Question No. 1 is compulsory.*
 - (ii) *Answer five questions in all.*
 - (iii) *All questions carry equal marks.*

1. (a) Explain the following in 2-3 sentences each. 10

- (i) Research
- (ii) Declarative Hypothesis
- (iii) Sample
- (iv) Structured Interview
- (v) Logical Error

(b) Give one example of each of the following : 5

- (i) Correlational Study
- (ii) Power Test
- (iii) Numerical Scale
- (iv) Null Hypothesis
- (v) Cohort Study

(c) Fill in the blanks :

5

- (i) Case study is a form of _____ research.
- (ii) Experimental study establish _____ relationship.
- (iii) Population contain _____ number of units.
- (iv) Structured questionnaires pose _____ questions.
- (v) Chi-square test is used for _____ data.

2. A researcher wants to study Vitamin D deficiency in adolescents girls of their city. Design a research proposal with following components : 5+4+3+3+5

- (a) Research Objectives
- (b) Research Hypothesis
- (c) Research Design
- (d) Sample size determination
- (e) Data collection method

3. Differentiate between the following by giving examples : 5+5+5+5

- (a) Observational and Experimental Intervention
- (b) Total Population and Sample Population
- (c) Simple and Stratified Sampling
- (d) Content Validity and Construct Validity

4. Explain the following briefly by giving suitable example. 5+5+5+5

- (a) Qualitative Data
- (b) Histogram
- (c) Sensitivity
- (d) Range

5. (a) Compute variance and standard deviation 5+5
for the following frequency distribution.

Class Interval	Frequency
120 - 124	4
125 - 129	3
130 - 134	9
135 - 139	8
140 - 144	7
145 - 149	1

- (b) Calculate Mean, Median and Mode from 10
the following grouped data when frequency
is given :

Class Interval	Frequency
35 - 39	2
40 - 44	1
45 - 49	6
50 - 54	0
55 - 59	5
60 - 64	9

6. (a) Explain any three strengths and three 6+6
limitations of the following research tools :

- (i) Interview
(ii) Journals

- (b) Describe how the researcher can ensure the 8
quality of data.

7. (a) Compute the rank difference correlation for 12
the following data.

X	10	12	9	20	16	11	22	13
Y	9	11	14	21	15	7	12	8

- (b) Describe the techniques of Interviewing. 8

8. Write short notes on **any four** of the following : 5+5+5+5
- (a) Asking question to collect data
 - (b) Stages in process of observation
 - (c) Uses of Attitude Scale
 - (d) Incidental Sample
 - (e) Pre-experimental Design
-



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No. of Printed Pages : 4

MFN-009

01003

**MASTER OF SCIENCE (DIETETICS AND
FOOD SERVICE MANAGEMENT)**

Term-End Examination

December, 2017

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

Time : 3 hours

Maximum Marks : 100

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

-
1. (a) Define the following : 10
- (i) Null Hypothesis
 - (ii) Two Tailed Test
 - (iii) Sampling Frame
 - (iv) Unstructured Interview
 - (v) Type I Error
- (b) Give one example of each of the following : 5
- (i) Speed Test
 - (ii) Numerical Scale
 - (iii) Structured Observation
 - (iv) Sampling Method
 - (v) Schedule

- (c) Fill in the blanks : 5
- (i) Descriptive studies are _____ in nature.
 - (ii) Variables are _____ in factorial design.
 - (iii) Sampling unit is used for _____.
 - (iv) _____ is the advantage of unstructured questionnaire.
 - (v) Z-Test are commonly used _____ tests.

2. A researcher wants to study night blindness among children in the age group 2 - 6 years. Design a research proposal with following components. 5+4+3+3+5

- (a) Research Objectives
- (b) Research Hypothesis
- (c) Research Design
- (d) Sample Size Determination
- (e) Data Collection Method

3. Differentiate between the following by giving examples. 5+5+5+5

- (a) Case Control and Cross Sectional
- (b) Sampling Frame and Sampling Error
- (c) Cluster Sampling and Multistage Sampling
- (d) Graphic Scale and Standard Scale

4. Explain the following by giving suitable examples. 5+5+5+5
- (a) Non Parametric Test
 - (b) Frequency Polygon
 - (c) Predictive Value
 - (d) Power of a test

5. (a) Compute variance and standard deviation 5+5
for the following frequency distribution.

Class Interval	Frequency
120 - 124	5
125 - 129	8
130 - 134	3
135 - 139	7
140 - 144	2
145 - 149	9

- (b) Calculate mean, median and mode from the 5+5
following grouped data when frequency is
given.

Class Interval	Frequency
35 - 39	5
40 - 44	3
45 - 49	1
50 - 54	8
55 - 59	2
60 - 64	6

6. (a) Explain any three strengths and three 4+4
limitations of the following research tools.

- (i) Observation
(ii) Official Documents

- (b) In a study done on birth weight and 12
neonatal deaths among 1300 infants, the
researcher observed the following :

- 500 infants were LBW and 300 among
them had neonatal death.
- 800 infants were normal weight and
150 neonatal deaths among them.

Construct a 2×2 Table and calculate the
Relative risk of mortality among LBW and
normal weight infants.

7. (a) Compute the value difference correlation for the following data : 10

X 9 10 8 6 3 1 12 11

Y 12 9 4 13 6 7 10 9

- (b) What are Parametric Test ? Give the uses and limitations of Parametric Tests. 5+5

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

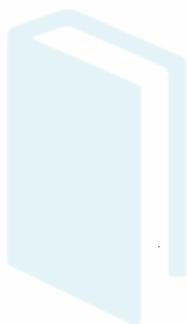
(a) Sensitivity and specificity of tools. 5+5+5+5

(b) Double Blind study.

(c) Limitation of Altitude Scale

(d) Stratified Sampling

(e) True Experimental Design



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MFN-009

00730

**MASTER OF SCIENCE (DIETETICS AND
FOOD SERVICE MANAGEMENT) (M.Sc. DFSM)**

Term-End Examination

June, 2018

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

Time : 3 hours

Maximum Marks : 100

- Note :**
- (i) *Question No. 1 is compulsory.*
 - (ii) *Answer five questions in all.*
 - (iii) *All questions carry equal marks.*

1. Define/Explain the following in 2 - 3 sentences each : 20
- (a) Epidemiology
 - (b) Systematic Error
 - (c) Cohort
 - (d) Placebo
 - (e) Population
 - (f) Null Hypothesis
 - (g) Control in Experimental Research
 - (h) Representativeness of sample
 - (i) Participant observation
 - (j) Individual Test

2. You have to study malnutrition among children in the age group one to seven in your district. Develop research proposal with the following components :
 - (a) Title of Research Study 2
 - (b) Research Objectives 4
 - (c) Sample size & Sampling techniques 4
 - (d) Research Tools 5
 - (e) Method of Data Collection & Data Analysis 3+2=5

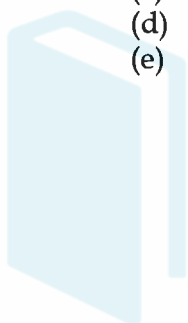
3. Explain the following in brief :
 - (a) Ethical Neutrality 5
 - (b) Uses of questionnaire 5
 - (c) Content validity 5
 - (d) Qualitative Data 5

4. Differentiate between the following sets of terms :
 - (a) Discrete and continuous variable 5
 - (b) Single blinding and double blinding 5
 - (c) Nominal scale and ordinal scale 5
 - (d) Thurstone scale and Likert scale 5

5. Test scores of 10 students enrolled in MFM-009 is 20 given below :
 Score : 20, 20, 17, 16, 14, 14, 10, 8, 6, 4
 Calculate mean, median, mode, standard deviation and range for the above data.

6.
 - (a) Describe the basic characteristics of a good hypothesis. 6
 - (b) Explain the points you will keep in mind while developing the research design. 6
 - (c) Describe the advantages and limitations of the case control studies. 8

7. (a) Calculate the product moment 'r' Pearson 10
from the following data for two variables
 x (Height) and y (Weight) for 10 children.
 x - 120, 125, 127, 125, 145, 140, 155, 160, 140, 161
 y - 45, 47, 50, 52, 55, 50, 58, 60, 55, 62
- (b) Describe the parametric and non- 10
parametric tests which can be used by the
researcher while analysing their data.
8. Write short notes on **any four** of the following : 5+5+5+5
- (a) Characteristics of normal probability curve
 - (b) External criticism of data
 - (c) Uses of documents as research tool
 - (d) Validity of research tool
 - (e) Cluster sampling



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MFN-009

**MASTER OF SCIENCE (DIETETICS AND
FOOD SERVICE MANAGEMENT) (M.Sc. DFSM)**

Term-End Examination

December, 2018

01802

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

Time : 3 hours

Maximum Marks : 100

Note :

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

1. (a) Define/Explain the following in 2 – 3 sentences each :

20

- (i) Biostatistics
- (ii) Sampling Error
- (iii) Cohort Study
- (iv) Placebo
- (v) Sample

- (vi) Declarative Hypothesis
- (vii) Manipulation in Experimental Research
- (viii) Adequacy of Sample
- (ix) Non-Participant Observation
- (x) Group Test

2. "High Blood Pressure is becoming very common in people in the 20 – 30 years age group." You have to find out the causes of high blood pressure. Develop a research proposal with the following components :

- (a) Title of research study 2
- (b) Research questions 2
- (c) Research objectives 4
- (d) Sample size and sampling techniques 4
- (e) Research tools 5
- (f) Method of data collection and analysis 3

3. Explain the following in brief :

- (a) Descriptive variables 5
- (b) Limitations of questionnaire 5
- (c) Official records 5
- (d) Quantitative data 5

4. Differentiate between the following sets of terms :

- (a) Stochastic and Deterministic variables 5
- (b) Single blinding and Triple blinding 5
- (c) Nominal and Metric scales 5
- (d) Numerical scale and Graphical scale 5

5. Test scores of 10 students enrolled in MFN – 009 course is given below :

30, 28, 21, 15, 18, 14, 24, 28, 17, 20.

Calculate mean, median, mode, standard deviation, variance and range for the above data. 20

6. (a) Describe the basic characteristics of a good hypothesis. 6
- (b) Explain the points you will keep in mind while developing the research design. 6
- (c) Describe the advantages and limitations of the cohort studies. 8

7. (a) Compute product moment correlation for the following data : 10

X	45	40	65	55	42	31	35	22
Y	24	16	15	42	40	37	27	42

- (b) Describe the various mortality and morbidity parameters you may study for epidemiological research. 10

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

- (a) Stages of Research Process
- (b) Internal Criticism of Data
- (c) Uses of Journals as Research Tools
- (d) Reliability of Research Tools
- (e) Multistage Sampling



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No. of Printed Pages : 4

MFN-009

**MASTER OF SCIENCE IN DIETETICS
AND FOOD SERVICE MANAGEMENT
(MSCDFSM)**

Term-End Examination

June, 2019

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

Time : 3 Hours

Maximum Marks : 100

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

1. (a) Explain the following in 2-3 sentences each : 10

- (i) Epidemiology
- (ii) Research
- (iii) Objective
- (iv) Sample
- (v) Reliability

(b) Give one example for each of the following : 5

- (i) Forced Choice Ratings

[2]

MFN-009

- (ii) Purposive sample
- (iii) Close ended question
- (iv) Use of Interview
- (v) Declarative hypothesis
- (c) Fill in blanks : 5
 - (i) Number of deaths in a group of people is called
 - (ii) The arithmetic average of a distribution is called
 - (iii) is the measures of the likelihood of an event.
 - (iv) Data which are got by applying interval scale of measurement is data.
 - (v) Listing of all sampling units in the target population is called

2. You want to study the causes of cold and cough during winters in children in your city.

Design a brief research proposal with the following components :

- (a) Research title 2
- (b) Research questions and objectives, 5
- (c) Research design 3
- (d) Research methods and tools 4
- (e) Data collection and analysis 6

[3]

MFN-009

3. Differentiate between the following by giving examples :

- (a) Case control and cohort studies 5
- (b) Nominal scale and ordinal scale 5
- (c) Power test and Speed test 5
- (d) Participant observation and non-participant observation 5

4. Explain the following briefly by giving suitable example :

- (a) Official records 5
- (b) Qualitative data 5
- (c) Histogram 5
- (d) Content validity 5

5. (a) Compute product moment correlation for the following data : 10

X	Y
5	3
15	13
20	23
25	33
30	43
35	53
40	63

[4]

MFN-009

- (b) Calculate the median and mode from the following grouped data when frequency is given : 10

C. I.	Frequency
70—74	5
65—69	3
60—64	9
55—59	6
50—54	2
45—49	7

6. (a) Explain the steps involved in conducting experimental research. 10
- (b) Explain the characteristics of case study method. 10
7. (a) Differentiate between structured observation and unstructured observation. Explain the process of observation. 5 + 5
- (b) Describe, how as a researcher you will ensure the quality of data. 10

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

- (a) Demographic variables
- (b) Collection of data
- (c) Observation of behaviour
- (d) Adequacy of sample
- (e) Cluster sampling

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M02762

MFN-009

**MASTER OF SCIENCE (DIETETICS AND FOOD
SERVICE MANAGEMENT) (M.Sc. DFSM)**

Term-End Examination,

December 2019

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

Time : 3 Hours]

[Maximum Marks : 100

Note : (i) Question No.1 is compulsory.

(ii) Answer five questions in all.

(iii) All questions carry equal marks.

1. a) Explain the following in 2-3 sentences each. 10

- i) Biostatistics
- ii) Science
- iii) Hypothesis
- iv) Sampling
- v) Usability of data

b) Give one example for each of the following: 5

- i) Rating by cumulative point
- ii) Quota sample
- iii) Open ended question
- iv) Limitation of Interview
- v) Null hypothesis

(2)

- c) Fill in the Blanks: 5
- i) Number of people sick during a time period divided by number of people in the total population is called _____.
 - ii) _____ is a measure of position rather than magnitude.
 - iii) _____ is a measure of the distance in standard deviation of a sample from the mean.
 - iv) Data which are got by applying nominal scale of measurement is _____ Data.
 - v) Number of units sampled for inclusion in the study is called _____.

2. Dengue is a very common fever during the rainy season. Design a brief research proposal to study the cleanliness in your area with the following components:

- i) Research Title 2
- ii) Research Questions and objectives 5
- iii) Research design 2
- iv) Sample, sample size and sample technique 6
- v) Research tools 3
- vi) Data collection and analysis 2

3. Differentiate between the following by giving examples.
5+5+5+5

- a) Correlational studies and migrant studies.
- b) Nominal scale and metric scale.
- c) Individual test and Group test
- d) Participant observation and non-participant observation.

(3)

4. Explain the following briefly by giving suitable examples

5+5+5+5

- Journals
- Quantitative data
- Frequency polygon
- Construct validity

5. a) Compute product moment correlation for the following data

10

X	2	12	22	32	42	52	62
Y	1	5	7	4	3	8	2

b) Calculate the Median and Mode from the following grouped data when frequency is given.

5+5

C.I	Frequency
-----	-----------

70-74	2
-------	---

65-69	6
-------	---

60-64	5
-------	---

55-59	7
-------	---

50-54	3
-------	---

45-49	1
-------	---

6. a) Describe the Quasi Experimental Design. Give a suitable example.

10

b) Describe the main steps involved in a case control, study design.

10

(4)

7. a) Differentiate between close ended and Open ended questionnaire. Explain the stages in the process of designing the Questionnaire. 5+5
- b) Describe the Normal probability distribution curve used in Research. 10

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

5+5+5+5

- a) Health related variables
- b) Scope of research in nutrition
- c) Utilization of Records
- d) Measures for validity of diagnostic tests
- e) Systematic sampling



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MFN-009

**MASTER OF SCIENCE (DIETETICS
AND FOOD SERVICE MANAGEMNT)**

M. SC. (DFSM)

Term-End Examination

June, 2020

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

Time : 3 Hours

Maximum Marks : 100

Note : (i) Question No. 1 is compulsory.

(ii) Answer five questions in all.

(iii) All questions carry equal marks.

1. Explain the following in 2-3 sentences each : 20

- (a) Mortality**
- (b) Demographic variable**
- (c) Ethical neutrality**
- (d) Conversational studies**

P. T. O.

[2]

MFN-009

- (e) Random error
- (f) Observational study
- (g) Post test
- (h) Sampling frame
- (i) Numerical scale
- (j) Parametric test

2. Iron deficiency anemia is very common in women in the age group 15 to 49 years. You have to prepare a research study for your district on this problem. Develop a research proposal with the following :

- | | |
|------------------------------------|---|
| (a) Title of the research study | 2 |
| (b) Research questions | 3 |
| (c) Research objectives | 3 |
| (d) Sample and sampling techniques | 3 |
| (e) Research design | 3 |
| (f) Research tools | 3 |
| (g) Method of Data collection | 3 |

3. Explain the following in brief :

- | | |
|---------------------------------------|---|
| (a) Uses of questionnaire in research | 5 |
|---------------------------------------|---|

[3]

MFN-009

- (b) Structured Interview 5
- (c) Hypothesis testing 5
- (d) Authenticity of data 5
4. Differentiate between the following sets of terms :
- (a) Stochastic and deterministic variable 5
- (b) Two-tailed and one-tailed tests of significance 5
- (c) Purposive sample and Incidental sample 5
- (d) Nominal scale and Ordinal scale 5
5. Test scores of 10 learners enrolled in MFN-009

is given below : 20

50, 40, 30, 25, 29, 45, 21, 15, 48, 36

Calculate the range, mean, mode, median, variance and standard deviation for the above data.

6. (a) Given below in tabular form is the (+) ve and (-) ve attitudes of male and female subjects regarding girls education.

[4]

MFN-009

Calculate the difference in attitudes between males and females subjects using

Chi-square test : 15

	(+) ve Attitude	(-) ve Attitude
Female	7	5
Male	9	6

- (b) What are Cohort Studies ? 5
7. (a) Describe the *five* methods used for descriptive statistical analysis. 10
- (b) Explain the different methods of graphical presentation of quantitative data. 10
8. Write short notes on any *four* of the following : 5 each
- (a) True experimental design
 - (b) Relative risk
 - (c) Official records
 - (d) Ensuring quality of data
 - (e) Probability—a measure of uncertainty

No. of Printed Pages : 4

MFN-009

**MASTER OF SCIENCE (DIETETICS
AND FOOD SERVICE MANAGEMENT)**

M. SC. (D. F. S. M.)

Term-End Examination

December, 2020

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

Time : 3 Hours

Maximum Marks : 100

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

1. Explain the following in **2-3** sentences each : 20

- (a) Disability
- (b) Health variables
- (c) Morbidity
- (d) Cohort study
- (e) Systematic error
- (f) Experimental study
- (g) Pretest

- (h) Sample size
 - (i) Histogram
 - (j) Non-parametric test
2. Vitamin D deficiency is very common in women in the age group 35 and above. You have to propose a study in your district on this problem. Develop a research proposal with the following components :
- (a) Title of the research study 2
 - (b) Research questions 3
 - (c) Research objectives 3
 - (d) Sampling and sampling techniques 3
 - (e) Research design 3
 - (f) Research tools 3
 - (g) Method of data collection 3
3. Explain the following in brief :
- (a) Limitations of questionnaire 5
 - (b) Unstructured interview 5
 - (c) Declarative hypothesis 5
 - (d) Authenticity of data 5

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4. Differentiate between the following sets of terms with appropriate examples :

- (a) Qualitative and Quantitative variables 5
- (b) Population and sample 5
- (c) Quota sample and incidental sample 5
- (d) Nominal scale and metric scale 5

5. Test scores of 10 learners enrolled in MFN-009 is given below :

40, 36, 29, 14, 27, 45, 50, 12, 39, 19

Calculate the range, mean, mode, median, variance and standard deviation for the above

data. 20

6. (a) Describe the characteristics of case study research method. 10

(b) Explain the various methods of sampling techniques. 10

7. (a) Enumerate the characteristics of normal distribution curve. 5

P. T. O.

[4]

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- (b) Given below are the Theory (X) and Practical (Y) scores of 10 students. Calculate the Pearson's ' r ' : 15

X	Y
45	42
54	50
52	55
58	46
62	59
46	41
55	46
49	48
50	45
54	48

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

- (a) Quasi experimental design 5
- (b) Types of interview 5
- (c) Experience documents 5
- (d) Data processing 5
- (e) Factorial analysis 5

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