MFN-009

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

Term-End Examination

June, 2021

MFN-009 : RESEARCH METHODS AND BIOSTATISTICS

Time : 3 hours   *Maximum Marks : 100*

Note :

    *1. Question no. **1** is **compulsory**.*

    *2. Answer **five** questions in all.*

    *3. **All** questions carry equal marks.*

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

    (i) Declarative hypothesis

    (ii) Quasi-Experimental design

    (iii) Morbidity

    (iv) Sampling error

    (v) Power

(b) Name the test you will use for the following : *5*

    (i) Comparison of means of two groups of subjects.

    (ii) Evaluate the association between two or more variables.

    (iii) Show a relationship between two categorical variables.

    (iv) Determine whether two populations having normal distribution have the same variance or standard deviation.

    (v) Use several explanatory variables to predict the outcome of a response variable.

(c) What do you understand by the measures of central tendency ? Using a set of data, explain them. *5*

2. As a researcher you want to study the impact of maternal nutrition on foetal outcome in a slum area. Design a brief research proposal with the following components :

(a) Research title *2*

(b) Introduction and importance of the study and objectives of the study *3+3*

(c) Research design *2*

(d) Sample, sample size determination and sampling technique for identification of subjects *4*

(e) Tools and techniques for data collection *4*

(f) Data analysis (Statistical tools) *2*

3. Differentiate between the following sets of terms giving appropriate examples :

(a) Treatment group and Control group *5*

(b) Descriptive and Analytical Cross-sectional Studies *8*

(c) Stratified and Cluster sampling *7*

4. At the global level, a study has been designed to look at the time taken in different countries for the rapid coordinated clinical investigation of the population at risk of Coronavirus infection. The following data was collected for different countries :

Time taken (days)									
15	19	22	15	28	13	23	5	12	20
28	8	24	20	30	2	17	7	26	9

(a) Prepare a frequency table, histogram and ogive for the data. *3+3+3*

(b) Calculate the mean, standard deviation and variance for the data. *3+3+3*

(c) Is the distribution skewed or systematic ? *2*

5. (a) What is a Cross-sectional Study ? Explain giving an example. *5*

(b) Describe the issues you would consider in setting up a case-control study. *10*

(c) Differentiate between Prospective and Retrospective Study, giving example. *5*

6. (a) What is a Questionnaire ? Enumerate the uses and characteristics of a good questionnaire. Also explain the various types of questionnaires available for research study. *2+2+3+5*

(b) What are Parametric Tests ? Discuss their application with suitable example. *8*

7. (a) Explain the different methods in which nominal and ordinal data can be graphically represented. Illustrate the methods/ways. *10*

(b) Given herewith is the 2×2 contingency table showing whether presence or absence of anaemia differentiates high and low achievers.

	Non-anaemic	Anaemic
High Achievers	115	35
Low Achievers	40	90

(i) Name the test you will use to establish the relationship between anaemia and low/high achievers. *3*

(ii) Calculate the value using the test mentioned at (i). *7*

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

(a) Attitude scale – its uses and design

(b) Coding of data

(c) Sensitivity and Specificity of a test

(d) Method for analyzing descriptive qualitative data

(e) Normal distribution

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