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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

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 stomatits		
	Present	Absent	Total
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 :

(i) Questionnaires 5

(ii) Rating scales

(b) What is a reference value ? Give two examples of any reference / normal values you may have come accross in your field of study. 5

(c) What is the importance of intervention studies in analytic epidemiologic research ? List the issues you would keep in mind in the design and conduct of intervention studies. 10

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.