02503

MASTER OF SCIENCE (DIETETICS AND FOOD SERVICE MANAGEMENT)

Term-End Examination

December, 2010

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) Explain the following in 2- 3 sentences   **10**
    only :

    (i) Placebo

    (ii) Beta error

    (iii) Parameter

    (iv) Documents

    (v) Percentile Rank

(b)   Match the items in **Column A** with the items   **10**
in **Column B**

	Column A		Column B
(i)	Quantitative data	(a)	Prevalence
(ii)	Qualitative data	(b)	scatter graph
(iii)	Graphical representation of frequency distribution	(c)	Ogive
(iv)	Graphical representation of optinal data	(d)	Birth rate
(v)	Graphical representation of relationship between two variables	(e)	Expressed in nominal ordinal, interval scale
(vi)	Probability	(f)	Measure of uncertainty
(vii)	Sensitivity	(g)	SPSS
(viii)	Indicator of morbidity	(h)	Expressed in the form of detailed description of situation place person etc.
(ix)	Desktop statistical package	(i)	Pie chart
(x)	Health related variable	(j)	Measure of validity

2. (a) HIV AIDS has emerged as a major health problem among certain community groups in our country. You as a researcher would like to investigate the prevalence and risk factors contributing to the problem and develop a nutrition/ health education programme for the masses. Plan a suitable study covering the following aspects..

(i) Statement of the problem (including) little of the study and its importance). **5**

(ii) Objectives of the study **3**

(iii) Sample and sampling procedure and sample size determination **5**

(iv) Data collection-Methodology, tools and techniques **5**

(v) Data Analysis and Interpretation of findings. **2**

3. (a) Illustrate through a flow chart the different study designs available for research in epidemiology **5**

(b) Identify the situation when you would use a care-control study for research. List the advantages and limitations of care control studies. **7**

(c) What are experimental studies ? Discuss briefly the aspects you would keep in mind while designing and conducting an experimental study. Give examples. **8**

4. (a) List the various types methods of sampling one can use in research. **4**

   (b) Differentiate between stratified random sampling and simple random sampling, giving appropriate examples. **6**

   (c) What do you understand by the terms **10**

       (i) Confidence Interval

       (ii) Level of significance

       (iii) Degree of Freedom

       Discuss their relevance in research and epidemiology.

5. (a) Describe the types, characteristics uses and limitations of questionnaire as a research tool. **10**

   (b) Enumerate the various types of observation and the steps involved in conducting them. **6**

   (c) What steps would you take as a researcher to ensure that the quality of data collected is sound ? **4**

6. (a) Differentiate between mean medium and mode with the help of an example. **10**

(b) A nutrition knowledge test was administered on two groups one consisting of 120 dietition and the other of 75 nurses. In a hospital. The mean and standard deviation of the nutrition knowledge score for the two groups is presented herewith :

Statistics	Nutrition Knowledge	
	Dietitions	Nurses
N	120	75
Mean (M)	57.5	55.75

(i) Compute the standard error of the difference between the mean scores. **5**

(ii) Determine whether the dietitions and nurses actually differ in nutrition knowledge. Test the significance of difference between means using Z - value. **5**

7. (a) Distribution of male and female learners in terms of their positive or negative attitude towards the MSc (DFSM) programme is given herewith. **10**

	Positive Attitude	Negative Attitude	Total
Female	7	5	12
Male	9	6	15

Test the difference in the attitude of male and female learners towards the MSc. (DFSM) programme at .05 level of significance.

(b) What are the points that one would need to **10**
keep in mind while deciding the sample size
for the study ? Give one simple formula you
would adopt for sample size determination.

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

5+5+5+5

(a) Descriptive variables in epidemiological
research.

(b) Attitude Scale : Types, uses and limitations

(c) Qualitative data - Organizing and Analysis.

(d) Characteristics of normal probability
distribution.

(e) Assumptions for analysis of variance
(ANOVA)