02553

# 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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