



## BRAINWARE UNIVERSITY

Course – MCOM

**Research Methodology & Application of Statistics in Business Research (MCM401)**

(Semester – 4)

**Time allotted: 3 Hours**

**Full Marks: 70**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

### Group –A

(Multiple Choice Type Question)

10 x 1 = 10

1. *Choose the correct alternative from the following*

- (i) Random sampling is helpful as it is \_\_\_\_\_.
- |  |                              |
|--|------------------------------|
| a. Reasonably accurate                     | b. Free from personal biases |
| c. An economical method of data collection | d. All of these              |
- (ii) Type II error occurs if \_\_\_\_\_
- |   |  |
|---|--|
| a. The null hypothesis is rejected even though it is true       | b. The null hypothesis is accepted even though it is false |
| c. Both the null as well as alternative hypotheses are rejected | d. None of these   |
- (iii) \_\_\_\_\_ is a preferred sampling method for the population with finite size.
- |                       |                        |
|-----------------------|------------------------|
| a. Area sampling      | b. Cluster Sampling    |
| c. Purposive Sampling | d. Systematic Sampling |
- (iv) Research that is conducted to address a specific business decision for a specific organization is called
- |                              |                                    |
|------------------------------|------------------------------------|
| a. applied business research | b. Basic business research         |
| c. Evaluation research       | d. Performance monitoring research |
- (v) What is an hypothesis?
- |   |   |
|---|---|
| a. A prediction of a relationship between certain variables | b. An experiment that tests certain predictions |
| c. An independent variable                                  | d. A dependent variable                         |

- (vi) Which of the following is included in research proposal?
  - a. Data analysis
  - b. Results
  - c. Literature review
  - d. Conclusion section
- (vii) Which section of a research report sets the stage for the report and indicates where in the report each component, tables, and figures can be found?
  - a. Preliminary pages
  - b. Table of contents
  - c. Main body
  - d. Appendices
- (viii) Which of the following is a measure in which a researcher adds or combines several distinct indicators of a construct into a single score?
  - a. Scale
  - b. Index
  - c. Unidimensionality
  - d. Weighting
- (ix) Which of the following terms best describes data that were originally collected at an earlier time by a different person for a different purpose?
  - a. Primary data
  - b. Secondary data
  - c. Experimental data
  - d. Field notes
- (x) Which of the following group that does not receive the experimental treatment condition?
  - a. Experimental group
  - b. Control group
  - c. Treatment group
  - d. Independent group

**Group – B**

(Short Answer Type Questions)

3 x 5 = 15

Answer any *three* from the following

- 2. Mention the steps involved in hypothesis testing process. [5]
- 3. Describe the concept of stratified random sampling. [5]
- 4. A filling machine is set to pour 952 ml of mineral water into bottles. The amounts of fill are normally distributed with a mean of 952 ml and a standard deviation of 4 ml. What is the probability that the bottle contains 952 to 956 ml of water? (Z value for 1 is 0.3413) [5]
- 5. What is sampling error? [5]
- 6. A normal population has a standard deviation of 10. A random sample of size 25 has a mean of 50. Construct a 95% confidence interval estimate of the population mean. (Z score for 95% confidence interval is 1.96). [5]

**Group – C**

(Long Answer Type Questions)

3 x 15 = 45

Answer any *three* from the following

- 7. Discuss the scaling techniques adopted by market researchers for any kind of quantitative research. [15]

8. Distinguish between primary and secondary data. Explain any three methods of collecting primary data using examples wherever possible. [15]
9. Describe probability and non - probability sampling technique with suitable example. [15]
10. Describe in brief, the importance of editing, coding, classification, tabulation and presentation of data in the context of a research study. [15]
11. (a) Random samples of 500 men and 500 women are selected to determine whether the proportions of men and women favouring a political candidate are different. [5]  
(i) Perform a hypothesis test at the 5% level, if in the samples, 225 men and 275 women favour the candidate. (Z value at 5% level of significance is 1.96).  
(ii) What is implied by the test result? [3]
- (b) Take any managerial decision that was taken in your organization and of which you are aware of the information and the process through which it has gone through. Analyse the problem solving steps that have gone through and the improvement that you would suggest if the same situation has to be faced all over again. [7]