

Seat No. : _____

AQ-120

April-2022

M.Sc. (CA & IT), Sem.-VI

Research Methodology

Time : 2 Hours]

[Max. Marks : 30

- Instructions :** (1) Statistical table will be provided on request.
(2) Question number 6 is compulsory.

SECTION-I

[Attempt any Three]

1. (A) Describe briefly Applied Research. 4
(B) Describe briefly the Research Process. 4
2. (A) Explain briefly from where the systematic bias may come. 4
(B) Write short notes on: Judgement Sampling 4
3. (A) What are the characteristics that a researcher must see before using secondary data ? 4
(B) Write briefly about the selection of appropriate method for data collection. 4
4. (A) Describe different steps in writing report. 4
(B) Write any four differences between Schedules and Questionnaires. 4
5. A fertiliser mixing is set to give 12 kg of nitrate for every 100 kg of fertiliser. Ten bags of 100 kg each are examined and the percentage of nitrate so obtained is 11,14,13,12,13,12,13,14,11 and 12. Is there reason to believe that the machine is defective ? 8

OR

An experiment was conducted to compare the mean time in days required to recover from common cold for person who are given daily dose of 4 mg vitamin C against those who are not given vitamin supplement. 35 persons were randomly selected for each treatment category and that the mean recovery times and standard deviation for two groups are given below

	Vitamin C	No Vitamin Supplement
Sample Size	35	35
Sample Mean	5.8	6.8
Sample Standard Deviation	1.2	2.9

Test the hypothesis that the use of vitamin C reduces the mean time required to recover from a common cold at 0.05 level of significance. 8

SECTION – II

Answer any 6. 6

- (1) There are 3 brands (Brand I, Brand II, Brand III) of a certain powder. A sample of 120 packets sold is examined and found to be bought by four groups A, B, C and D as shown below :

Brand	Group			
	A	B	C	D
I	1	4	8	14
II	5	8	13	6
III	18	19	11	13

To test if there is any significant difference in brand preference, which test will you apply ?

- (a) t test
- (b) F test
- (c) Z test
- (d) χ^2 test

(2) Ten pairs of maize plants were grown in parallel boxes and one member of each pair was treated with special manure, the difference in height (treated - untreated) is given to you. To test whether treatment is effective or not, which test would you apply :

- (a) χ^2
- (b) Z test
- (c) F test
- (d) t test

(3) Sample design must result in a truly representative sample

- (a) True
- (b) False

(4) Find the odd name from the list :

- (a) Alternative hypothesis
- (b) Level of significance
- (c) Test statistic
- (d) Sample space

(5) City : Mumbai Kolkata Delhi
Population Density(per sq. km): 654 685 423

Is a

- (a) Chronological classification
- (b) Geographical classification
- (c) Qualitative classification
- (d) Quantitative classification

- (6) Biased research refers to
- (a) Drawing conclusions by introducing one's own vested interest
 - (b) No conclusion
 - (c) No bibliography
 - (d) No diagram, table or figure
- (7) Select the incorrect statement :
- (a) Research provides the basis for nearly all government policies in our country
 - (b) Research solves various operational and planning problems in business and industry
 - (c) Research provides answer to various social problems.
 - (d) Research has no significance in applied economics
- (8) Historical Research uses historical sources
- (a) true
 - (b) false
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