

8. Put forward definition of t-test. Memory capacity of students was tested before and after giving the nourishing food (CHAVANPRASH). State whether CHAVANPRASH was effective or not from the following scores:

Roll no	1	2	3	4	5	6	7	8
Before	8	1	4	6	6	4	1	2
After	5	7	5	3	5	3	3	9

(Tabled t value is 2.145 at 0.05 α with calculated df.)

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2+8=10

REV-00
MGE/65/70

2018/12

MA/M.Sc. GEOGRAPHY
THIRD SEMESTER
STATISTICAL TECHNIQUES
MGE-302

(Use separate answer scripts for Objective & Descriptive)

Duration : 3 hrs.

Full Marks : 70

(**PART-A : Objective**)

Time : 20 min.

Marks : 20

Choose the correct answer from the following:

1×20=20

- Who devised the rank correlation technique?
 - Karl Pearson
 - Griffith Taylor
 - Mahalanobis
 - Spearman
- If d =rank difference of the variables, ρ =the rank correlation coefficient and N is the total number of observations, which of the following represents the expression for ρ ?
 - $\rho = \frac{1 - \sum d^2}{N(N^2 - 1)}$
 - $\rho = 1 - \frac{\sum d^2}{(N^2 - 1)}$
 - $\rho = 1 - \frac{6 \sum d^2}{N(N^2 - 1)}$
 - $\rho = 1 - \frac{\sum d^3}{N^3 - 1}$
- What is the meaning of correlation coefficient = -1?
 - Negative correlation
 - Highly negative correlation
 - Perfectly negative correlation
 - Correlation does not exist
- What is measure of relative variation?
 - Correlation
 - Coefficient of variation
 - Regression
 - Standard deviation
- What is value Y in the regression equation, $Y = 5 + 0.5 X$, when $X=2$?
 - 6
 - 5.52
 - 9
 - 12
- How many independent variables are there in a bivariate regression?
 - 1
 - 2
 - 3
 - 4
- From which Italian word the word 'statistics' has come?
 - Statis
 - Static
 - Statista
 - Statistica
- Which one of the following is an example of discrete variable?
 - Number of pencils
 - Weight of the people
 - Height of the people
 - Time
- Which one of the following is the best to represent frequency distribution?
 - Pie chart
 - Bar diagram
 - Dot map
 - Scattergraph

10. Which one of the following is not an example of primary data?
 a. Personal interview b. Data collected through questionnaire
 c. Data gathered through schedule d. Journal
11. What is the other name of ogive?
 a. Cumulative frequency graph b. Frequency graph
 c. Frequency polygon d. Frequency line graph
12. Who among the following has developed the concept of cluster analysis?
 a. Karl Pearson b. Driver and Kroeber
 c. Dale and Hull d. W. S. Gosset
13. Which measure of central tendency is derived from the most common value?
 a. Arithmetic Mean b. Variance
 c. Mode d. Median
14. Which two measures use the mean as a baseline and identify the extent to which scores differ from this?
 a. Standard deviation and median b. Variance and standard deviation
 c. Mode and median d. Sum and variance
15. Which percentage of scores falls within 1 standard deviation from the mean?
 a. 9% b. 99.7%
 c. 68% d. 95%
16. The mean of a distribution is 20 and the standard deviation is 5. What is the value of the coefficient of variation?
 a. 25% b. 40%
 c. 35% d. 27%
17. What is the probability of appearing head while tossing a coin once?
 a. 100% b. 1%
 c. 50% d. 0%
18. 25% of a quantity is x% of the quantity where x is:
 a. 6.25% b. 12.5%
 c. 25% d. 50%
19. Looking at the mirror, a man saw his clock on the wall showing 3 o'clock. What was the actual time shown by the clock?
 a. 3 o'clock b. 6 o'clock
 c. 9 o'clock d. 12 o'clock
20. If the variance of a normal population is unknown, the corresponding sampling distribution can be defined using:
 a. F-distribution b. t- distribution
 c. chi square d. z- test

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[PART-B : Descriptive]

Time : 2 hrs. 40 min.

Marks : 50

[Answer question no.1 & any four (4) from the rest]

1. Define data. Explain in details the various processes of data collection. 10
2. a. What is correlation? Mention various types of correlation techniques. 5+5=10
 b. Why regression techniques are useful in geographical studies?
3. a. Highlight the major steps in computing Karl Pearson's coefficient of correlation. 4+6=10
 b. Compute Karl Pearson's Coefficient of correlation for the following set of data.

Distance in km (X)	Fare in Rs (Y)
1	10
2	15
3	20
4	25
5	30
6	35
7	40

4. How tabulation is different from classification? Mention any two significance of tabulation. Explain the various parts of a table. 2+2+6=10
5. Find the standard deviation and coefficient of variation from the following data and interpret the result. 6+2+2=10

Wages (Rs)	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of workers	12	18	35	42	50	45	20	8

6. The median of the following data is 525. Find the values of x and y, if the total frequency is 100. 5+5=10

Class Interval	0-100	100-200	200-300	300-400	400-500	500-600	600-700	700-800	800-900	900-1000
Frequency	2	5	x	12	17	20	y	9	7	4

7. Define probability. Explain three important terminologies of probability. 2+3+5=10
 In an organization, out of 200 employees, 40 are having their monthly salary more than Rs. 15000 and 120 of them are regular takers of Alpha brand tea. Out of those 40, who are having monthly salary more than Rs. 15000, 20 are regular takers of Alpha brand tea. Parag is an employee there, what is the probability that he is having monthly salary more than Rs. 15000, if he is a regular taker of Alpha brand tea?