

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

Duration: 3 Hrs.

Marks: 70

PART : A (OBJECTIVE) = 20
PART : B (DESCRIPTIVE) = 50

[PART-B : Descriptive]

Duration: 2 Hrs. 40 Mins.

Marks: 50

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

1. What is rank correlation? Explain the process of computing the Spearman's rank correlation coefficient. (2+8=10)
2. Compute Karl Pearson's coefficient of correlation from the following set of data and interpret your result: (8+2=10)

X (Distance in km)	Y (Fare in Rs)
1	2
2	5
3	6
4	8
5	10
6	12

3. Set up the regression equation of Y on X from the following set of data and compute the fare for 10.5 km from the regression equation. (8+2=10)

X (Distance in km)	Y (Fare in Rs)
1	2
2	5
3	6
4	8
5	10
6	12

4. What is multivariate analysis? Describe any one technique of multivariate analysis. (2+8=10)

5. Draw Histogram, Frequency polygon and Frequency curve from the following set of distribution. Put forward proper definition of each. (2+2+2+4=10)

Experience(in months)	No. of social workers
5 - 10	5
10 -15	6
15 -20	15
20 -25	10
25-30	5
30 -35	4
35 -40	2
40 -45	2

6. Write short notes on any two: (2×5=10)
- Probability.
 - Principal Component Analysis.
 - Statistical measures.
 - Hypothesis and types of error.
 - Clustering.
7. If in a normal distribution, variance of the weight of cement bags of a particular company is specified as 0.60 kg, and a sample of 8 cement bags taken and found the variance of the sample is 0.30 kg. Then check the quality at a significance level of 0.01 and draw an inference. Give support of suitable diagram. ($\chi^2=1.239$) (2+4+2+2=10)
8. Energy level of students was tested before and after giving the nourishing food (Horlicks). State H_0 and H_1 and find out whether Horlicks was effective or not from the following scores. (significance level at 0.05, $t=1.734$) (2+4+2+2=10)

Roll no	1	2	3	4	5	6	7	8	9	10
Before	10	04	09	08	07	10	03	0	05	06
After	10	09	10	07	05	08	10	02	03	08

== *** ==

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

[PART-A : Objective]

Choose the correct answer /option from the following:

1×20=20

1. As x increases y also increases. What is the relationship between x and y?
 - a. Perfectly positive
 - b. Perfectly negative
 - c. Positive
 - d. Negative
2. What is the highest value of the coefficient correlation?
 - a. Infinity
 - b. -1
 - c. 100
 - d. 1
3. In the regression equation of y on x, $y=6.5+2.1x$; what is the value of the intercept of the line?
 - a. 2.1
 - b. 1
 - c. 6.5
 - d. 0.5
4. It is observed in the dataset that the yield of a crop is gradually increased while more and more fertilizer (in kg/ hectare) applied in the field by the farmers. Which one is the independent variable?
 - a. Application of fertilizer (in kg/ hectare)
 - b. Field
 - c. Yield of crop
 - d. Farmer
5. One of the techniques of understanding correlation between the variables without any computation is:
 - a. Hythergraph
 - b. Scattergram
 - c. Pie Graph
 - d. Histogram
6. Which one of the following indicates a non-linear relationship?
 - a. $Y = 5 + 2.5X$
 - b. $Y = 10X - 50$
 - c. $Y = 1.25X^2$
 - d. $Y = X - 1$
7. Which of the following helps in determining the coefficient of determination?
 - a. Coefficient of variation.
 - b. Coefficient of correlation.
 - c. Coefficient of skewness.
 - d. Standard deviation.
8. The coefficient correlation between the variables is 0.85, which of the following is applicable for its interpretation?
 - a. Perfectly positive relationship.
 - b. Very strong relationship.
 - c. No relationship.
 - d. Strongly positive relationship.
9. In which of the following cases the clustering techniques prove helpful?
 - a. Digital image processing.
 - b. Digital image classification.
 - c. Digital Terrain Modelling.
 - d. Computing Image histogram.
10. In a multivariate regression analysis, which one of the following is true?
 - a. There are many dependent variables.
 - b. There is only one independent variable.
 - c. There are many independent variables.
 - d. There is no independent variable.
11. While tossing a coin once, the probability of appearing head is:
 - a. 100%
 - b. 1%
 - c. 50%
 - d. 0%
12. If ' $>$ ' means ' $-$ ', ' $-$ ' means ' $+$ ', ' $+$ ' means ' x ' and ' x ' means ' $+$ ', then $17 > 15 - 5x2 + 7 > 9x3 = ?$
 - a. 16
 - b. 18
 - c. 20
 - d. 22
13. Marks of five students in statistics are as 15,33,63,83,100; Find out the average marks.
 - a. 68.8
 - b. 58.8
 - c. 50.8
 - d. 78.8
14. From the above marks find out the median.
 - a. 53
 - b. 63
 - c. 73
 - d. 43

15. The ratio of two chi square variables is:
- t-distribution
 - z-distribution
 - F-distribution
 - None of the above
16. If average deviation is 105, and mean is 210, then Coefficient of AD is:
- 1.0
 - 0.5
 - .99
 - 0.7
17. If sample size is 20 for product A and 18 for product B, then degree of freedom will be:
- 21 & 19
 - 17 & 19
 - 19 & 17
 - 16 & 17
18. Which is not a measure of central tendency?
- Weighted mean
 - Variance
 - Geometric mean
 - Arithmetic mean
19. 25% of 25% of a quantity is x% of the quantity where x is:
- 6.25%
 - 12.5%
 - 25%
 - 50%
20. If in a certain language PUNCTUAL is coded as 16598623, how would ACTUPULN be coded?
- 834536
 - 29861635
 - 834530
 - 834539

== *** ==

UNIVERSITY OF SCIENCE & TECHNOLOGY, MEGHALAYA



[PART (A) : OBJECTIVE]

Duration : 20 Minutes

Serial no. of the
main Answer sheet

Course :

Semester : Roll No :

Enrollment No : Course code :

Course Title :

Session : 2017-18 Date :

Instructions / Guidelines

- The paper contains twenty (20) / ten (10) questions.
- Students shall tick (✓) the correct answer.
- No marks shall be given for overwrite / erasing.
- Students have to submit the Objective Part (Part-A) to the invigilator just after completion of the allotted time from the starting of examination.

Full Marks	Marks Obtained
20	

Scrutinizer's Signature

Examiner's Signature

Invigilator's Signature