

MA GEOGRAPHY
Third Semester (Repeat)
STATISTICAL TECHNIQUES
(MGE - 302)

Duration: 3Hrs.

Full Marks: 70

Part-A (Objective) =20
Part-B (Descriptive) =50

(PART-B: Descriptive)

Duration: 2 hrs. 40 mins.

Marks: 50

Answer any four from Question no. 2 to 8
Question no. 1 is compulsory.

1. Define statistics. Mention its types and variables with proper examples. (2+8=10)
2. Define factor analysis. Write steps of Principal Component Analysis (PCA).
(2+8=10)
3. Mention about types of correlation. The annual training expenditure (lakhs of rupees) and the corresponding labour productivity index (0-100) for the past 8 years of a country are presented below-

Year(i)	Annual training expenditure(X_i)	Productivity index(Y_i)
1	5	80
2	7	90
3	9	75
4	10	85
5	12	95
6	15	70
7	18	95
8	20	60

Find the correlation coefficient between X_i and Y_i after Pearson's product moment formula.
(5+5=10)

4. The heights of different dogs (at the shoulders) are: 600mm, 470mm, 170mm, 430mm and 300mm. Find out the Mean, the Variance, and the Standard Deviation
(3+4+3=10)

5. In an assessment, two samples of students from two regions of same distance learning institute from same variance gave the following results:

Sample	Size	Sample variance	Significance level(α)
1(n_1)	10	$64(S_1^2)$	0.05
2(n_2)	15	$40(S_2^2)$	

Find out calculated F ratio and check that calculated F ratio is more than table F value. (The tabulated value of F at 0.05 level for 9 and 14 degree of freedom is $F_{0.05}=2.65$).
(8+2=10)

6. Define probability. Explain three important terminologies of probability. Mention about various approaches to probability.
(2+3+5=10)

7. Classify statistical measures and put forward proper definition for each. Give support of examples.
(10)

8. Department of Earth Science has deputed four different batches of its students to four different training programmes (A, B, C and D) to improve their communication skills. Each batch contained five students with similar qualification background. After the training programme the department conducted a common examination to test their improvement. The percentage scores are summarized in the following table:

A	B	C	D
80	70	65	90
90	60	50	89
96	55	58	85
85	85	55	95
70	90	40	80

Perform ANOVA to check whether there is a significant difference in terms of improving communication skills of students by assuming a significance level of 0.05.
(10)

MA GEOGRAPHY
Third Semester (Repeat)
STATISTICAL TECHNIQUES
(MGE - 302)

Duration: 20 minutes

Marks – 20

(PART A - Objective Type)

I. Choose the correct answer:

1×20=20

1. A man proceeding to the north turns to the right, after sometime he takes a turn to the left and again to the left, then he goes to right and after some distance again turns towards his right. The direction in which he is moving now is-
 - i. East
 - ii. North
 - iii. South
 - iv. West
2. When the measure of skewness is 0, it is called-
 - i. Positive skewness
 - ii. Negative skewness
 - iii. Bell shaped
 - iv. Symmetrical
3. If group has value 10,12,16,25,30, the range is-
 - i. 10
 - ii. 20
 - iii. 25
 - iv. 30
4. If A-addition, S-subtraction, M-multiplication and D-division then $10D5S14D2A9M1=?$
 - i. 2
 - ii. 3
 - iii. 4
 - iv. 5
5. Relation between two variables is determined by-
 - i. Dispersion
 - ii. Mean
 - iii. Correlation
 - iv. Regression
6. Find the geometric mean of 2 and 18.
 - i. 6
 - ii. 8
 - iii. 12
 - iv. 16
7. If average deviation is 105, and mean is 210, then Coefficient of AD is-
 - i. 1.0
 - ii. 0.5
 - iii. .99
 - iv. 0.7
8. Q_3-Q_1/Q_3+Q_1 , is-
 - i. Coefficient of range
 - ii. Coefficient of variation
 - iii. Coefficient of quartile deviation
 - iv. Coefficient of mean
9. Which is not a measure of central tendency?
 - i. Weighted mean
 - ii. Standard deviation
 - iii. Geometric mean
 - iv. Arithmetic mean
10. Median is a-
 - i. Positional average
 - ii. Mathematical average
 - iii. Both i and ii
 - iv. None of these
11. 25% of 25% of a quantity is x% of the quantity where x is-
 - i. 6.25%
 - ii. 12.5%
 - iii. 25%
 - iv. 50%
12. A coefficient of correlation is computed to be -0.95 means that-
 - i. Relation is weak.
 - ii. Relation is strong and positive.
 - iii. Relation is strong but negative.
 - iv. No relation.
13. Mean deviation, Variance and Standard Deviation of the values 4,4,4,4,4 is-
 - i. 4
 - ii. 8
 - iii. 2
 - iv. 0
14. In statistics, a sample means-
 - i. A portion of the sample.
 - ii. A portion of the population.
 - iii. All items under investigation.
 - iv. None of the above.

15. The weights of students in a college is a-

- i. Discrete variable
- ii. Continuous variable
- iii. Qualitative variable
- iv. None of these

16. Number of outcomes of a dice when rolled a few times is-

- i. Experiment
- ii. Event
- iii. Sample space
- iv. Trial

17. The middle value of an ordered array of numbers is the-

- i. Mode
- ii. Mean
- iii. Median
- iv. Mid point

18. The mean of a distribution is 23, the median is 24 and mode is 25.5. The distribution is-

- i. Positively skewed
- ii. Symmetrical
- iii. Asymptotic
- iv. Negatively skewed

19. If mean is 25 and standard deviation is 5 then C.V. is-

- i. 25%
- ii. 100%
- iii. 75%
- iv. 20%

20. If in a certain language PUNCTUAL is coded as 16598623, how would ACTUPULN be coded?

- i. 834536
- ii. 29861635
- iii. 834530
- iv. 834539



University of Science and Technology, Meghalaya

Date Stamp: _____

SESSION 2016-17				
COURSE _____ PAPER CODE: _____				
NAME OF THE PAPER: _____				
SEMESTER _____				
Instructions to Candidates	For Objective Type Questions	Session: 2016-17		
<ol style="list-style-type: none"> 1. This answer booklet has 4 pages. Please check before writing whether it is complete or in good condition. 2. Do not write your name anywhere in the answer booklet. 3. Write legibly on both sides of the paper 4. You may use some space for any rough notes or calculation on the answer booklet if you need. These rough notes, calculations must be scored out before submitting the answer booklet. 5. Do not bring any book or loose paper in the examination hall. 6. Do not tear any page from the answer booklet. 7. Do not write anything on the question paper or blotting paper or any pieces of paper while you are in the examination hall. 8. Any act of indiscipline or misbehavior in the examination hall will result in your expulsion. 9. No examinee is allowed to leave the examination hall until 30 minutes lapse after the commencement of the examination. 10. Additional answer sheet will be supplied after the main answer booklet is completed. 	Page No.	Marks	Answer script's Serial No: _____	

				Course _____
				Semester _____
				Name of the Paper _____

	Total		Paper Code _____	
	For Descriptive Type Questions			
	Question No.	Marks		
	Total			
	Grand Total			

Scrutinizer's Signature

Examiner's Signature

Invigilator's Signature