

**MA ECONOMICS**  
**SECOND SEMESTER**  
**STATISTICAL TECHNIQUES**  
**MEC – 204**

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. a. Write a note on advantage of Graphical Representation. 5+5=10  
b. Draw an ogive from the following data and find median from the ogive.

Class	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60
Frequency	6	9	13	23	19	15	9	6

2. a. Define census & sample. Mention three advantages and disadvantages of census. 5+5=10  
b. Distinguish between primary & secondary data.

3. a. What do you mean by measures of central tendency? Why it is called measures of location? Write the formula different measures of central tendency. 5+5=10

- b. Find Mean Deviation about mean and Standard Deviation from the following data

Class	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	8	12	25	40	35	20	10

4. a. Given that  $r_{xy} = 0.6$ ,  $Cov(x, Y) = 7.2$ ,  $Var(y) = 16$ , find the standard deviation of x. 2+3+5  
b. State three properties of correlation coefficient. Prove one of them. =10

- c. Find the correlation coefficient between x and y from the following data and interpret the result

X: 80 76 72 68 64 60  
Y: 73 59 66 45 52 38

5. a. What do you mean by term Index number? Mention the different uses of Index number.

5+5=10

b. Why Fishers index number is said to be ideal index number

Calculate Fishers's ideal Index number from the following data and show that it satisfies both the Time Reversal Test and Factor Reversal Test

Commodity	2005		2009	
	Price	Value	Price	Value
		100	12	96
A	10	96	8	104
C	12	144	15	120
D	20	300	25	250
E	5	40	8	64
F	2	20	4	24

6. a. Define time series. What are its component? Enumerate the objective of analysis of time series.

5+5=10

b. State merits and demerits of Moving Average method. From the data given below Calculate 3 yearly weighted moving averages, the weights being 2,3,3.

Year	1998	1999	2000	2001	2002	2003	2004
Production	5	7	3	2	4	6	3

7. a. Distinguish between correlation and regression in context of statistic.

2+2+6

b. Why there are always two lines of regression?

=10

c. Find the line of regression of Y on X from the following data

X: 10 20 30 40 50 60

Y: 4 12 20 24 32 38

Also find the value of y when  $x = 3$  and  $x = 65$

8. a. Give an example of events which are at the same time equally likely, mutually exclusive and exhaustive.

2+3+5

=10

b. Give the classical definition of probability with example. Four coins are tossed. What is the probability of getting

i. at least one head

ii. head & tail alternately.

c. What is the probability of an impossible event? A sub committee of 6 members is to be formed out of a group consisting of 7 men and 4 ladies. Find the probability that the sub- committee will consist of at least 2 ladies.

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Duration: 20Mnts.

Marks: 20

[ PART-A : Objective ]

Choose the correct answer from the following:

1×20=20

1. \_\_\_\_\_ is a techniques which enables us to draw inferences about the entire population simply by studying a few of them.  
 a. Census  
 b. Sampling  
 c. branching  
 d. None of these
2. Publications of Universities and Research institutes are the sources of \_\_\_\_\_ data.  
 a. Primary  
 b. Secondary  
 c. census  
 d. None of these
3. Coefficient of skewness is \_\_\_\_\_ unity  
 a. less than  
 b. Greater than  
 c. Equal to  
 d. None of these
4. For a qualitative phenomenon \_\_\_\_\_ is a suitable average  
 a. Mean  
 b. Median  
 c. Mode  
 d. None of these
5. The sum of deviations of the values from their mean is always is \_\_\_\_\_  
 a. 0  
 b. 1  
 c. 2  
 d. None of these
6. Frequencies which occur repeatedly in a test score are called  
 a. Mean  
 b. Median  
 c. Mode  
 d. None of these

7. In drawing histogram the class intervals should be \_\_\_\_\_  
 a. Discrete  
 b. Continuous  
 c. Both a) & b)  
 d. None of these
8. In a frequency curve when mean > . Median > mode, the curve is said to be \_\_\_\_\_ curve  
 a. Positively skewed  
 b. Negatively skewed  
 c. Symmetrical  
 d. None of these
9. Cost of living index numbers are also known as \_\_\_\_\_ index numbers.  
 a. wholesale price  
 b. Retail price  
 c. Consumer price  
 d. None of these
10.  $P(\text{Certain Set}) = ?$   
 a. 0  
 b. 1  
 c. 2  
 d. All of These
11.  $P(A \cup B) = P(A) + P(B)$  , implies A and B are \_\_\_\_\_.  
 a. Independent  
 b. Mutually Exclusive  
 c. Equally likely  
 d. None Of these
12. Both of the event A and B occur is expressed as  
 a.  $(A \cup B)$   
 b.  $(A \cap B)$   
 c.  $(\overline{A \cap B}) \cup (A \cap \overline{B})$   
 d. None of these
13. The coefficient of correlation is independent of  
 a. change of scale only.  
 b. change of origin only.  
 c. both change of scale and origin.  
 d. neither change of origin nor change of scale.

14. If  $r=0$ , the two lines of regression are \_\_\_\_\_.

- a. parallel
- b. Perpendicular
- c. Coincide
- d. None of these

15. If one of the regression coefficient is unity, the other must be \_\_\_\_\_

- a. greater than unity
- b. Less than unity
- c. Equal to unity
- d. None of these

16. If the price of a commodity in the current year be 25% in excess over the base year price, then the price index for the commodity is \_\_\_\_\_.

- a. 50
- b. 100
- c. 125
- d. None of these

17. In \_\_\_\_\_ method the sum of the squares of these deviation would be the least as compared to the sums of deviations obtained by using any other line

- a. Moving average
- b. Semi Average
- c. Least square
- d. None of these

18. The component of a time series for "Selling trend of a particular commodity at particular time" is associated with .

- a. Trend
- b. Seasonal
- c. Cyclical
- d. Irregular

19. Name the distribution whose mean, median and mode coincide at the same point.

- a. Binomial
- b. poisson
- c. normal
- d. None of these

20. Bernouli trial has only \_\_\_\_\_ possible outcomes

- a. Two
- b. Three
- c. Four
- d. None of these

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# UNIVERSITY OF SCIENCE & TECHNOLOGY, MEGHALAYA



## Question Paper CUM Answer Sheet

### PART (A) : OBJECTIVE

Serial no. of the main Answer sheet

Course : .....

Semester : ..... Roll No : .....

Enrollment No : ..... Course code : .....

Course Title : .....

Session : ..... 2016-17 ..... Date : .....

#### Instructions / Guidelines

- The paper contains twenty (20) / ten (10) questions.
- The student shall write the answer in the box where it is provided.
- The student shall not overwrite / erase any answer and no mark shall be given for such act.
- Hand over the question paper cum answer sheet (Objective) within the allotted time (20 minutes / 10 minutes) to the invigilator.

Full Marks	Marks Obtained	Remarks
20		

Scrutinizer's Signature

Examiner's Signature

Invigilator's Signature