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
	50	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.

   b. State merits and demerits of Moving Average method. From the data given below calculate 3 yearly weighted moving averages, the weights being 3,5,3.

Year	1998	1999	2000	2001	2002	2003	2004
Production in "000"	50	70	30	20	40	60	30

7. a. Distinguish between correlation and regression in context of statistic.   2 +2 + 6 = 10

   b. Why there are always two lines of regression?

   c. Find the line of regression of X on Y from the following data:
   x : 10 20 30 40 50 60
   y: 4 12 20 24 32 38
   Also find the value of x when y = 3 and y = 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. two heads and two tails 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 6 men and 4 ladies. Find the probability that the sub- committee will consist of at least 3 ladies

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[4]

MA ECONOMICS
SECOND SEMESTER
STATISTICAL TECHNIQUES
MEC – 204 (Repeat)
(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*

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

11. P(Certain Set) = ?
    a. 0
    b. 1
    c. 2
    d. All of these

11. P(AU B)= P(A) + P(B) , implies A and B are_____.
    a. Independent
    b. Mutually Exclusive
    c. Equally likely
    d. None Of these

1. Both of the event A and B occur is expressed as
   a. (AUB)
   b. $(A \cap B)$
   c. $\overline{(A \cap B)} U (A \cap \overline{B})$
   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. Perpendicular
    b. parallel
    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.

1. 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 .

(**PART-B : Descriptive**)

Time : 2 hrs. 40 min.   Marks : 50

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

1. a. Discuss data representation in graphical method.   4+6 = 10
    b. Draw an ogive from the following data and find median from the ogive.

Class	30-35	35-40	40-45	35-40	45-50	55-60	60-65	65-70
Frequency	7	9	17	23	19	14	9	5

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 dispersion? Write the formula of different masures of dispersion.
    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	18	22	35	40	35	15	10

4. a. Given that r_{xy} = 0.6,Cov (x, Y) = 8.2 , Var(y) = 25 , find the standard deviation of x.   2+3+5 =10
    b. State three properties of correlation coefficient . Prove one of them.
    c. Find the correlation coefficient between x and y from the following data and interpret the result.
       X: 60   55   48   39   62   60
       y: 73   59   66   45   52   38

5. a. What do you mean by term Index number? Why index number is called economic barometer?