UNIT 1

1. Branches of statistics includes

   a) Applied statistics b) Mathematical statistics c) Industry statistics **d) both a and b**

2. Arithmetic mean is 12 and number of observations are 20 then sum of all values is

   a)8 b)32 **c)240** d)1.667

3. Which of the following is not the limitation of statistics?

   a)Homogeneous statistical data **b)Analysis of data**

   c)Presentation of means d)Inductive logic is applied

4. Method used to compute average of central value of collected data is considered as

   a) Measures of positive variation **b) measures of central tendency**

   c) Measures of negative skewness d) measures of negativee variation

5. Mean or average used to measure to central tendency called

   a) sample mean **b) Arithmetic mean** c) Negative mean d) Population mean

6. _____ diagram is suitable when components are to be compared with in each group.

   a)Multiple bar b)Simple bar c)subdivided bar d)percentage bar

7. Sub divided bar diagram is other wise known as

   a)Component bar diagram b)Multiple bar diagram

   c)Simple bar diagram d)subdivided bar diagram

8. _____is the total of the values of the time divided by their number.

   a)Arithmetic mean b)Median c)Mode d) Geometric mean

9. what is the formula for calculating mean by direct method

   a)∑m/N b) ∑X/X c) ∑X/A **d) ∑X/N**

10. Median is the value o f the _____item when all the items are in the order of magnitude.

    a)First **b)Middle** c)Top d)Greatest

11. Position of median is

    a)N+1/3 **b)N+1/2** c)N+1/4 d)N+1/1

12. How to calculate i value?

    a)Upper boundary + Lower boundary **b)Upper boundary - Lower boundary**

    c) Upper boundary * Lower boundary d) Upper boundary / Lower boundary

13. _____is the value which has the greatest frequency density.

a)Arithmetic mean b)Median **c)Mode** d) Geometric mean

14. The set which has only one mode is said to be

a)unimodal b)multimodal c)bimodal d)meanmodal

15. Sets with two modes are said to be

a)unimodal b)multimodal **c)bimodal** d)meanmodal

16. Which set have more than two modes is?

a)unimodal **b)multimodal** c)bimodal d)meanmodal

17. Which is the frequency of the class succeeding the modal class?

a) f1 **b) f2** c) f0 d) f3

18. Find the difference between 3median and 2mean is

a) Arithmetic mean b) Median **c) Mode** d) Geometric mean

19. What is mean by reciprocal of the mean of the reciprocal of the values

a) Arithmetic mean b) Median c) Mode **d) Harmonic mean**

20. Difference of mode and mean is equal to

a)3(Mean-Median) b)2(mean-median) c)2(mean-mode) d)2(mode-mean)

UNIT II

21. _____is the difference between the greatest and the smallest values

a)Variance b)Dispersion **c)Range** d)deviation

22. Find the value of range. 8 10 5 9 12 11

a)6 b) 8 **c)7** d)2

23. The half of the difference between the first and third quartiles,

a)Quartile deviation b)Standard deviation c)Mean d)Range

24. Semi Inter Quartile Range also known as

a) Quartile deviation b)Standard deviation c)Mean d)Range

25. What is the formula for calculating Quartile deviation?

a)Q3-Q1/2 b)Q3+Q1/2 c)Q3-Q2/2 d) Q3/Q1-2

26. What is the formula for calculating Q3 is

a)3(N-1/4) b) (N+1/4) c) 3(N+1/2) **d) 3(N+1/4)**

27. What is the formula for calculating Q1 is

a)3(N-1/4) **b) N+1/4** c) N+1/2 d) 3(N+1/4)

28. Standard deviation is the root mean square deviation of the values from their

a) Arithmetic mean b) Median c) Mode d) Harmonic mean

29. Who introduced the concept of standard deviation?

a)Bowley **b)Karl pearson** c)Laspeyres d)Fisher

30. When the concept of standard deviation is introduced?

a)1891` b)1892 **c)1893** d)1894

31. _____is the degree of asymmetry, or departure from symmetry, of a distribution.

a) skewness b) Median c) standard deviation d) Harmonic mean

32. What is the formula for calculating Karl pearson's coefficient of skewness

a)Mean-Mode/quartile deviation b) Mean-Median/standard deviation

c) Mean-Mode/standard deviation d) Mean+Mode/standard deviation

33. Which of the following is the tool of measures of the variation of the items

a)Mode b)Mean c)Hypothesis **d)Dispersion**

34. Types of descriptive measures includes

a) Measures of skewness b) measures of dispersion

c)Measures of central tendency **d) all of above**

35. In a negative skewed distribution, order of mean, median and mode is as

a) mean<median>mode b) mean>median>mode

c) mean<median<mode d) mean>median<mode

36. Method of calculating coefficient of skewness by Karl Pearson method is useful for type of distributions that are

a)non concentrated **b) open ended** c) close ended d)concentrated

37. Coefficient of skewness by Karl Pearson, Professor Kelly and professor Bowley are considered as

a) Relative measure of skewness b) absolute measure of skewness

c)concentrated measure of skewness d)directed measure of skewness

38. Select the absolute measures except

a)Range b)Standard deviation c)Variance **d) coefficient of variation**

39. In terms of dispersion difference, measurement of dispersion for available data is classified as

a) Average measures **b) Distance measures**

c) Average deviation measures d) availability measures

40. Measures of variation which is useful for highly skewed distribution is

a) Inter quartile deviation **b) Quartile deviation** c) Inter quartile range d) Quartile range

UNIT III

41. _____is the relationship between the variables.

a)Regression b)skewness c) index number **d)Correlation**

42. When the values of two variables change in same direction there is _____correlation.

a) Positive b)negative c)simple d)multiple

43. When the values of two variables change in opposite direction there is _____correlation.

a) Positive **b)negative** c)simple d)multiple

44. When more than two variables are considered, the correlation between two of them when all other variables are held constant?

a) Partial correlation b) negative correlation

c)simple correlation d)multiple correlation

45. When more than two variables are considered, the correlation between one and its estimate based on the group consisting other variables is called

a) Positive correlation b) negative correlation

c)simple correlation **d)multiple correlation**

46. When all the points lie exactly on a line, there is

a)Non linear correlation b)simple correlation d)multiple correlation **d)linear correlation**

47. When all the points lie exactly on a curve, there is

a)Non linear correlation b)simple correlation

c)multiple correlation d)linear correlation

48. When all the points scattered neither around a line nor around a curve is

a)Non linear correlation **b)no correlation** d)multiple correlation d)linear correlation

49. Karl pearsons coefficient of correlation is also called

a)variable moment correlation **b)product moment correlation**

c)positive moment correlation d) Negative moment correlation

50. Who used the word regression in 1877?

a)Bowley b)Karl pearson **c)Francis Galton** d)Fisher

51. The regression equation is also called

a)estimating equation b)variable equation c)positive equation d)average equation

52. What is mean by regression?

a)returning b)going back **c)both a and b** d)estimation

53. Correlation coefficient is a number between

a)-1 and +1 b)-1 or +1 c)-1 and +2 d) a)-2 and +1

54. Karl Pearson's coefficient of correlation method of measuring correlation is

a)Graphic **b)Mathematical** c)Positional d)Curve

55. Which is the most widely used method of calculating correlation?

a)Scatter diagram **b)Karl pearson's** c)Spearman's d)Bowley's

56. In regression, the equation that describes how the resaponse variable (y) is related to the explanatory variable(x) is

a) The correlation modal b) the regression model

c) used to compute the correlation coefficient d) none of these

57. A process by which we estimate the value of dependent variable on the basis of one or more independent variable is called

a)Correlation **b) Regression** c)Residual d)Slope

58. The slope of the regression line of Y on X is also called

a)Correlation coefficient of X on Y b) Correlation coefficient of Y on X

c) Regression coefficient of X on Y **d) Regression coefficient of Y on X**

59. if the value of any regression coefficient is zero, then two variables are

a)Qualitative b)correlation **c)Independen** d)Dependent

60. all data points falling along a straight line is called

a)Linear relationship b)Non Linear relationship c)Residual d)Scatter diagram

UNIT IV

61. The price of a commodity in the base year

a)p_0 b)p_1 c)q_1 d)q_0

62. The price of a commodity in the current year

a)p_0 **b)p_1** c)q_1 d)q_0

63. The quantity of a commodity in the base year

a)p_0 b)p_1 c)q_1 **d)q_0**

64. The quantity of a commodity in the current year

a)p_0 b)p_1 **c)q_1** d)q_0

65. What is the formula for calculating price index number is(P)

a)$(p_1/p_0)*100$ b) $(p_1/p)*100$ c) $(p_1/q_0)*100$ $(q_1/p_0)*100$

66. What is the formula for calculating Laspeyres method is

a)$\sum p_1q_1/\sum p_0q_0*100$ **b)$\sum p_1q_0/\sum p_0q_0*100$** c)$\sum p_0\ q_0/\sum p_0q_0*100$ d))$\sum p_1q_0/\sum p_0q_1*100$

67. What is the formula for calculating paasches method is

a)$\sum p_1q_1/\sum p_0q_0*100$ **b)$\sum p_1q_1/\sum p_0q_1*100$** c)$\sum p_0\ q_0/\sum p_0q_0*100$ d))$\sum p_1q_0/\sum p_0q_1*100$

68. Cost of living index number is also known as

a)consumer index number b)consumer cost

c)consumer price index number d)consumer quantity index number

69. An index number is used

a) To measure changes in price b) To measure changes in demand

c) To measure changes in a variable over time d) To measure changes in quantity

70. The ratio of a new price to the base year price is called the

a) Price decrease b) Price increase c) Price absolute **d) Price relative**

71. A simple aggregate quantity index is used to

a) Measure the overall change in price of a range of products

b) Measure the change in price of a product

c) Measure the change in quantity of a product

d) Measure the overall change in quantity of a range of products

72. A simple aggregate price index

a) Compares relative quantities to relative prices **b) Ignores relative quantities**

c) Considers relative quantities d) Compares absolute prices to absolute quantities

73. The Laspeyres and Paasche index are examples of

a)Weighted price index only b)Weighted quantity index only

c) Aggregate index numbers **d) weighted index numbers**

74. The Laspeyres price index

a) Regards the base year prices as fixed b) Regards the current year quantities as fixed

c)Regards the base year quantities as fixed d) None of the above

75. **A simple index number is a number that measures a relative change in ____ ?**

a) group of variable with respect to a base b) **single variable with respect to a base**

c) Both A & B d) single variable with respect to a current

76. **Price Index Numbers measures the changes in?**

a) relative changes in prices of commodities between two periods

b) Physical quantity of goods produced

c) single variable d) None of the Above.

77. **Index Numbers may be categorized in terms of ___?**

a)variables **b)** constants c) numbers d) fixed value

78. **Which of the following is method of constructing Index Numbers ?**

a) Aggregative Method b) **Relative Method** **c)** Both A & B d) None of the Above.

79. Index numbers can be used for

a) Forecasting b) Fixed prices c) Different prices d) Constant prices

80. While computing a weighted index, the current period quantities are used in the:

a) Laspeyre's method· **b) Paasche's method**

c) Marshall Edgeworth method d) Fisher's ideal method

UNIT V

81. _____is a collection of observations made sequentially in time.

a)Line series b)non linear series **c)Time series** d)observation series

82. Which one is the regular interval of time series?

a) Flood b) Earthquake c) war **d) annual profits**

83. Which one is the irregular interval of time series?

a) Flood b) daily sales c) census d) annual profits

84. Secular trend is the _____term effect.

a)Short b)Medium **c)Long** d)both a and b

85. Seasonal fluctuation is the _____term variation.

a)Short b)Medium c)Long d)both a and c

86. Which have certain wave like movements?

a)Least squares **b)Business cycle** c)Business forecasting d)Forward planning

87. What period the profits are easily made and are made in plenty?

a)Prosperity b)Recession c)Depression d)Recovery

88. What period the some things are decline instead of improving?

a)Prosperity **b)Recession** c)Depression d)Recovery

89. Irregular variation is also called

a)regular variation b)seasonal fluctuation c)cyclical fluctuation d)random variation

90. Graphic method is otherwise known as

a) Semi average **b) Free hand method** c) moving average d) least squares

91. Method of moving average is an _____method.

a) Graph **b) algebraic** c) variation d) Fluctuation

92. Method of least squares of is an

a) Semi average b) Free hand method c) moving average **d) objective method**

93. Which method requires more time than the other method?

a) Semi average b) Free hand method c) moving average **d) least squares**

94. What is the formula for calculating seasonal index?

a) (Seasonal Average/Grand average) +100 b) (Seasonal Average/Grand average)-100

c) (Seasonal Average/Grand average)*100 d) (Seasonal Average/Grand average)/100

95. Difference from moving average is based on

a) Additive model b) multiplicative model c) Subtractive model d) Division model

96. Ratio to moving average is based on

a) Additive model **b) multiplicative model** c) Subtractive model d) Division model

97. How to calculated correction factor?

a) 100*Grand average b) 100+Grand average

c) 100/Grand average d) 100-Grand average

98. How to calculate seasonal indices?

a)100*No. of seasons b) 100/No. of seasons

c) 100*Grand average d) 100+No. of seasons

99. Ratio to trend of each season is obtained by

a) (Actual value/trend)*100 b) (Actual value/average)*100

c) (Actual value/season)*100 d) (Actual value/grand average)*100

100. How to calculate Link relative method?

a)(Value of current season/Value of previous season) * 100

b) (Value of current season*Value of previous season) * 100

c) (Value of first season/Value of previous season) * 100

d) (Value of current season/Value of last season) * 100

UNIT I

1. Define statistics.

   Numerical statement of facts in any department of enquiry, placed in relation to each other".
2. State the functions of statistics.

   Collection of data, numerical presentation.
3. Write down the scope of statistics.

   Industry, commerce and business, economics and management.
4. What are the types of diagrams?

   One dimensional, two dimensional three dimensional and pictograms & cartograms.
5. Bring out the limitations of statistics.

   Statistics does not deal with qualities, it can be misused and results are not extracted.
6. Define arithmetic mean.

   Arithmetic mean is the total of the values of the items divided by their number.
7. List out the methods of finding arithmetic mean.

   Direct method, Shortcut method and Step deviation method.
8. What is mean by median?

   Median is the value of the middle most item when all items are in the order of magnitude.
9. Define mode.

   Mode is the value which has greatest frequency density.
10. Write down the meaning for harmonic mean.

    Harmonic mean is the reciprocal of the mean of the reciprocal of the values.

UNIT II

11. Bring out the absolute measures.

    Range, quartile deviation, mean deviation, standard deviation and variance.
12. Define range.

    Range is the difference between the greatest and the smallest of the values.
13. What is mean by quartile deviation?

    Quartile deviation is the half of the difference between the first and third quartiles.
14. Show the other name for quartile deviation.

    Semi Inter Quartile Range.

15. Write down the meaning for standard deviation.

    The root mean square deviation of the values from their arithmetic mean.

16. Define skewness.

    Skewness is the degree of asymmetry or departure from symmetry of a distribution.

17. What are the absolute measures of skewness?

    Mean- Median and Median – Mode.

18. Write down the formula for calculating quafrtile deviation.

    $Q.D=(Q_3 - Q_1)/2$

19. Who introduced the concepts of standard deviation?

    Karl Pearson introduced the concepts of standard deviation.

20. Bring out the methods for finding standard deviation.

    Actual mean, direct method assumed mean and step deviation.

UNIT III

21. What is mean by correlation?

    Correlation refers to the relationship between the variables.

22. State the types of correlation.

    Positive correlation and negative correlation.

23. Write down the meaning for linear correlation.

    When all the points are lie exactly on a line there is linear correlation

24. Bring out the methods of linear correlation.

    Scatter diagram, Karl pearson coefficient of correlation, spearman’s rank correlation

25. Write down the merits of scatter diagrams.

    This is easy to draw; it is not mathematical and simple to understand.

26. State the other name for karl parson’s coefficient of correlation.

    Product moment correlation other name of karl parson’s coefficient of correlation.

27. What is mean by regression?

    Regression means going back.

28. Write about the regression equation.

    Regression equation gives the value of dependent variable corresponding.

29. Bring out the regression equation.

    Y=a + bX is Y on X; X=a + by is X on Y;

30. What is mean by positive correlation?

    When the values of two variables change in same direction there is positive correlation.

UNIT IV

31. Define index number.

    Index number is a single ratio which measures the combined change of several variables

32. What is mean by price index number?

    A price index number is the percentage of change in the price of one commodity

33. Write down the methods of finding index number.

    Un weighted method and Weighted method.

34. Show the formula for calculating price and quantity index number.

    $P = (p_1/p_0) * 100$; $Q = (q_1/q_0) * 100$

35. Write down the formula for calculating Laspeyre's method.

    $P_{01} = (\sum p_1 q_0 / \sum p_0 q_0) * 100$

36. What is the other name for cost of living index number?

    Consumer price index number is the other name of cost of living index number.

37. Bring out the meaning for cost of living index number.

    Impact of changes in the prices of a number of commodity and services

38. Show the two types of unweighted method.

    Simple aggregative method and simple averages of relative method.

39. Categories the weighted method.

    Weighted aggregative method and weighted averages of relative method.

40. State the formula for calculating cost of living index number by using arithmetic mean.

    Cost of living index number= $\sum WP / \sum W$

UNIT V

41. Define time series.

    A time series is a collection of observations made sequentially in times.

42. Bring out the components of short term variations.

    Seasonal fluctuations, cyclical fluctuations and irregular fluctuations.

43. Which of the factors causes seasonal variations?

    Climate and weather, customs, tradition and habits of the people.

44. Write down the four phases of business cycle.

Prosperity, recession, depression and recovery.

45. Show the other names for irregular variations.

    Random variation and erratic variation is other names of irregular variations.

46. List out the methods of estimate the secular trend.

    Graphic method, methods of semi average, method of moving average.

47. What are the methods are used to estimate the seasonal variations?

    Methods of simple average, methods of moving average, ratio to trend method.

48. Write down the formula for calculating seasonal index.

    Seasonal index = (Seasonal Average/ Grand average) *100

49. How to obtain the ratio to trend method of each season?

    (Actual season/Trend) *100

50. State the formula for link relative's method.

    Link Relatives = (Value of current season/ Value of previous season) *100

UNIT-I

1. Briefly explain the scope of statistics.
2. Determine the limitations of statistics.
3. Calculate the arithmetic mean. The expenditure of 10 families in rupees are given below:

Family	A	B	C	D	E	F	G	H	I	J
Expenditure	30	70	10	75	500	8	42	250	40	36

4. Find the geometric mean of 3 6 24 48
5. Find the Harmonic mean for the following individual data:
   6,15,35,40,900,520,300,400,1800,2000.

UNIT-II

6. Find the value rang and co-efficient for the following data:
   8 10 5 9 12 11
7. Find the quartile Deviation for the following:-
   391, 384, 591, 407, 672, 522, 777, 733, 1490, 2488
8. Calculate the standard deviation. 10 students of B.com. Classes of a college have obtained the following marks in statistics out of 100 marks.

S.No	1	2	3	4	5	6	7	8	9	10
Marks	5	10	20	25	40	42	45	48	70	80

9. Determine which distribution of marks is more skewed. From the marks secured by 120 students in section A and 120 students in section B of a class, the following measures are obtained:
   Section A: $\bar{X}$ = 46.83; S.D. = 14.8; Mode 51.67.
   Section B: $\bar{X}$= 47.83; S.D. = 14.83; Mode = 47.07.
10. Calculate quartile deviation:
    Price (Rs.) 10 12 13 16 11 12 13 10 15 19

UNIT-III

11. Compute the coefficient of correlation between X – Advertisement expenditure and Y sales.

X:	10	12	18	8	13	20	22	15	5	17
Y:	88	90	94	86	87	92	96	94	88	85

12. Calculate the coefficient of correlation.

    N = 9; $\sum x$=225; $\sum y$=214 $\sum xy$=7767; $\sum x$ =5685 $\sum y$ =11080

13. Find the two regression equation. You are given the following data:

	X	y
Arithmetic mean	36	85
Standard deviation	11	8
Correlation coefficient between X and Y	0.66	

14. From the following information on values of two variables X and Y find the two regression lines and the correlation coefficient

    N=10; $\sum$ = 20; $\sum y$ 40; $\sum x$ = 240; $\sum y$ = 410; $\sum$ Y 200

15. Given: $\sum x$=580; $\sum y$=370; $\sum xy$=370; $\sum x$ =11494; $\sum y$ = 41658; $\sum y$ =17206; N=12. Find the regression line of X on Y.

UNIT-IV

16. From the following data construct an index for 1995 takings 1994 as base;

Commodities	**A**	**B**	**C**	**D**	**E**
Price in 1994(Rs.)	50	40	80	110	20
Price in 1995(Rs.)	70	60	90	120	20

17. Calculate the index number of prices for 1998 on the basis of 1995 from the data given below:

Commodity	**Weights**	**price(1995)**	**price(1998)**
A	40	16	20
B	25	40	60
C	5	2	3
D	20	5	7
E	10	2	4

18. Calculate the cost of living index number from the following data:

Item	**Base year price**	**Current year price**	**Weights**
Food	39	47	4
Fuel	8	12	1
Clothing	14	18	3
House rent	12	15	2
Miscellaneous	25	30	1

19. From the following data, calculate price index number by Laspeyre's method

Commodity	**Base year**		**Current year**	
	Price	**Quantity**	**Price**	**Quantity**
A	2	40	6	50
B	4	50	8	40
C	6	20	9	30
D	8	10	6	20
E	10	10	5	20

20. Calculate price index number by Unweighted A.M

Item:	A	B	C	D	E
Price Rs.(1998):	20	35	50	10	5
Price in Rs.	22	42	70	10	4

UNIT-V

21. Draw the trend line by graphic method and estimate the production in 2003.

Year	1995	1996	1997	1998	1999	2000	2001
Production	20	22	25	26	25	27	30

22. Draw a trend line by the method of semi- averages.

Year	1987	1988	1989	1990	1991	1992	1993
Production	90	110	130	150	100	150	200

23. calculate 5 yearly moving average of number of students studying in a commerce college as shown by the following figures:

Year	No. of students	Year	No. of students
1987	332	1992	405
1988	311	1993	410
1989	357	1994	427
1990	392	1995	405
1991	402	1996	438

24. Using four yearly moving averages, calculate the trend values and short term fluctuations:

Year	1981	1982	1983	1984	1985
Production	464	515	518	467	502
Year	1986	1987	1988	1989	1990
Production	540	557	571	586	612

25. Assuming no trend in the series, calculate seasonal indices for the following data:

Year	Quarter			
	I	II	III	IV
1994	78	66	84	80
1995	76	74	82	78
1996	72	68	80	70
1997	74	70	84	74
1988	76	74	86	82

UNIT-I

1. From the following data, compute arithmetic mean by short cut method.

Marks obtained	0-10	10-20	20-30	30-40	40-50	50-60
No. of Students	5	10	25	30	20	10

2. Calculate the median height.

Height (cms)	145-150	150-155	155-160	160-165	165-170	170-175
No. of students	2	5	10	8	4	1

3. Find out the mode for the following data using grouping and analysis table.

Class interval	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40
Frequency	9	12	15	16	17	15	10	13

4. Find the median:

Interval	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Frequency	4	14	20	51	32	17	6	4

5. Find the harmonic mean and geometric mean for the following individual data:

   6, 15, 35, 40, 900, 520, 300, 400, 1800, 2000

UNIT-II

6. Find the quartile deviation for the data given here,.

X	351-500	501-650	651-800	801-950	951-1100
F	48	189	88	47	28

7. Calculate the standard Deviation for the following data:

Class interval	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45
Frequency	6	5	15	10	5	4	3	2

8. Compute coefficient of skewness by Karl Pearson's method:

Profit (Rs. Lakes)	10-20	20-30	30-40	40-50	50-60
No. of companies	18	20	30	22	10

9. Calculate either Bowley's coefficient of skewness.

Interval	0-10	10-20	20-50	50-100	100-250	250-500
Frequency	5	10	20	25	25	15

10. Calculate karl-pearson's coefficient of skewness.

(i)Mean=75; Mode=70; S.D=8

(ii)Mean=100; Median=102; S.D=12

UNIT-III

11. Calculate coefficient of correlation:

X	163	178	183	168	173	188	198	193	203	213
Y	210	190	180	200	200	190	160	190	150	150

12. Calculate the correlation coefficient between X and Y.

X	64	65	66	67	68	69	70
Y	66	67	65	68	70	68	72

13. Calculate the two regression equation from the following data.

X	10	12	13	12	16	15
Y	40	38	43	45	37	43

14. For the data given below, compute regression equation of Y on X.

X	146	152	158	164	170	176	182
Y	75	78	77	79	82	85	86

15. Find the coefficient of correlation for the data given below:

X	10	12	18	24	23	27
Y	13	18	12	25	30	10

UNIT-IV

16. Using geometric mean, calculate the cost of living index number for the year 2000.

Commodity	Price (1990)	Price (2000)	Weighted
Food	60	108	40
Clothing	50	94	17
Fuel and Lighting	40	65	13
House Rent	125	225	27
Miscellaneous	120	240	3

17. Find Laspeyre's Paasche's and Fisher's price and quantity index number from the following data:

Commodity	Base year		Current year	
	Price (Rs).	Quantity (kg.)	Price (Rs.)	Quantity (kg.)
A	5	25	6	30
B	10	5	15	4
C	3	40	2	50
D	6	30	8	35

18. Calculate the index number of prices for 1998 on the basis of 1995 from the data given below:

Commodity	**Weights**	**Price (1995)**	**Price (1998)**
A	40	16	20
B	25	40	60
C	5	2	3
D	20	5	7
E	10	2	4

19. Compute (I) Laspeyre's (ii) Paasche's and (iii) Fisher's index numbers.

Item	**Price**		**Quantity**	
	Base year	**Current year**	**Base year**	**Current year**
A	6	10	50	50
B	2	2	100	120
C	4	6	60	60
D	10	12	30	25

20. Calculate price index number by Unweighted A.M and G.M

Items	A	B	C	D	E
Price in Rs. (1998)	20	35	50	10	5
Price in Rs. (2001)	22	42	70	10	4

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21. Fit a straight line trend equation to the following data by the method of least squares and estimate the value of sales for the year 1985.

Year	1979	1980	1981	1982	1983
Sales (in Rs.)	100	120	140	160	180

22. Determine the seasonal fluctuation in time series given below, indicating clearly the procedure followed.

Year	Quarter I	Quarter II	Quarter III	Quarter IV
1951	30	81	62	119
1952	33	104	86	171
1953	42	133	99	221
1954	56	172	129	335
1955	67	201	136	302

23. Calculate 6 yearly centered moving averages of the Earnings Per Share (EPS) of a company.

Year	1985	1986	1987	1988	1989	1990	1991	1992
EPS (Rs.)	12	13	15	14	14	16	18	22
Year	1993	1994	1995	1996	1997	1998	1999	2000

EPS (Rs.)	24	26	29	25	21	25	27	29

24. Find the seasonal index from the following table by ratio to moving average method.

Seasons	1990	1991	1992	1993	1994
I quarter	40	42	41	45	44
II quarter	35	37	35	36	38
III quarter	38	39	38	36	38
IV quarter	40	38	42	41	42

25. Find the seasonal variations by the ratio to trend method from the data given below:

Year	Quarter I	Quarter II	Quarter III	Quarter IV
1972	39	20	60	85
1973	45	23	62	90
1974	44	25	69	92
1975	53	30	70	97
1976	60	32	76	100