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(FYUGP)

(3rd Semester)

ECONOMICS

Paper Code : EC3.SEC2

(Methods of Data Analysis)

Full Marks : 37.5 *Pass Marks* : 40%

Time : 2 hours

(PART : B – DESCRIPTIVES)

(*Marks* : 25)

The questions are of equal value

ection C: Answer ***any 5*** questions (5x5 = 25)

.1. Explain the common uses of correlation.

.2. Outline the important properties of regression coefficient.

.3. In a sample survey of smoking habits in 2 towns, the following data were derived:

Category	Town A	Town B
Males in total population	52%	54%
Smokers	26%	28%
Male Smokers	18%	20%

Tabulate the data.

Q.4. Draw cumulative frequency curve or ogive for the following data

Marks –	0-10	10-20	20-30	30-40	40-50	50-60	60-7
Students –	4	4	7	10	12	8	5

Q.5. Represent the given data on the enrolment of students in various departments in DGC by a multiple bar diagrams.

Year	Economics	English	History	Pol. Science
2021	45	50	30	20
2022	20	20	15	10
2023	40	30	46	15

Q.6. Calculate the coefficient of correlation (by actual mean method) from the following data and interpret the result.

Roll No	1	2	3	4	5	6	7	8
Marks in Eco	10	6	9	10	12	13	11	9
Marks in Stats	9	4	6	9	11	13	8	4

Q.7. Two students were asked to rank the efficiency of their teachers. The ranks given by them are as follows:

Teachers :	A	B	C	D	E	F	G
John :	2	1	4	3	5	7	6
James :	1	3	2	4	5	6	7

Calculate Spearman's rank correlation coefficient.

8. Compute Spearman's rank correlation coefficient for the following observation:

Candidate –	1	2	3	4	5	6	7	8
Judge X –	20	22	28	23	30	30	23	24
Judge Y –	28	24	24	25	26	27	32	30

9. Calculate regression equations of Y on X from the given data by taking deviations from actual mean of the X and Y series.

X:	1	2	3	4	5	6	7	8	9
Y:	9	8	10	12	11	13	14	16	17

10. From the given data, find the regression line.

A -	6.25	6.5	6.5	6	6.25	6.25
B -	4.03	4.02	4.02	4.04	4.03	4.03

★★★

2025

(FYUGP)

(3rd Semester)

ECONOMICS

(Skill Enhancement Course)

Paper Code : EC3/SEC-2

(Methods of Data Analysis)

(PART : A—OBJECTIVES)

(Marks : 12.5)

The figures in the margin indicate full marks for the questions

A. Put a Tick (✓) mark against the correct answers in the brackets provided : (Answer any 15) 15x0.5 = 7.5

1. In .....than cumulative frequency distribution, frequencies are progressively totalled

(a) less ( )

(b) more ( )

(c) both (a) and (b) ( )

2. The difference between upper and lower limit of a class is known as ..... of that class.
(a) span ( )
(b) width ( )
(c) class interval ( )
(d) All the above ( )
(f) Only (a) and (c) ( )
(g) Only (b) and (c) ( )

3. Diagrams and graphs are useful for the layman, not for the experts because they are not of help in analysing data.
(a) Yes ( )
(b) No ( )
(c) Can't say ( )

4. The ..... tables are usually very extensive and spread over many pages which are often placed in an appendix or form a separate part of the statistical report.
(a) Text ( )
(b) Summary ( )
(c) Reference ( )
(d) General ( )
(e) Only (a) and (c) ( )
(g) Only (c) and (d) ( )
(h) Only (b) and (c) ( )

5. Presentation of data in the form of pictures depicting the kind of data under consideration is called
(a) Pictogram ( )
(b) Vienna Method ( )
(c) Isotype method ( )
(d) Cartogram ( )
(e) All the above ( )
(f) Only (a), (b) and (c) ( )
(g) Only (b), (c) and (d) ( )

Data involving one dependent variable is a case of ..... data.

(a) Univariate ( )

(b) Bivariate ( )

(c) Multivariate ( )

7. Discrete variable series can be presented in a continuous type of series and vice versa.

(a) Yes ( )

(b) No ( )

(c) Can't say ( )

8. Headings and sub-headings given to columns are called ..... while row headings are called .....

(a) head note, footnote ( )

(b) prefatory note, stubs ( )

(c) captions, stubs ( )

(d) captions, footnote ( )

9. A graph of frequency distribution which has more than 4 sides is called

(a) Ogive ( )

(b) Percentile Curve ( )

(c) Frequency polygon ( )

(d) Histogram of unequal class interval ( )

10. Presentation of quantitative information on geographical basis is called

(a) Pictogram ( )

(b) Historigram ( )

(c) Histogram ( )

(d) Cartogram ( )

11. The regression equation of X on Y is

(a) $Y = a + bX$ ( )

(b) $X = a + bY$ ( )

(c) Both ( )

12. The cause-and-effect relationship is studied under

(a) correlation analysis ( )

(b) regression analysis ( )

(c) Both ( )

13. The average value of the two regression coefficients will be ..... the value of the correlation.

(a) smaller than ( )

(b) greater than ( )

(c) equal to ( )

(d) All the above ( )

It is not possible that one regression coefficient is negative while the other is positive.

(a) True ( )

(b) False ( )

(c) Can't say ( )

The greater the value of coefficient of determination (r2),

(a) the better the fit of the regression line ( )

(b) the more useful the regression equations as a predictive device ( )

(c) the more scatter of observations around the fitted regression line ( )

(d) All the above ( )

(e) Only (a) and (b) ( )

(f) Only (b) and (c) ( )

5. In regression equation Y = a + bX

(a) X is the independent variable, also known as the predictor or explanatory variable ( )

(b) 'a' is the Y -intercept, which represents the value of Y when X is 0. ( )

(c) 'b' is the slope of the line, indicating the change in Y for a one-unit change in X. ( )

(d) All the above ( )

(e) Only (a) and (c) ( )

(f) Only (b) and (c) ( )

17. If the value of X and Y is either multiplied or divided by some constant, then the regression coefficients will .....

(a) remain the same ( )
(b) increase ( )
(c) also change ( )
(d) decrease ( )

18. If one of the regression coefficients is greater than unity, the other must be

(a) greater than unity ( )
(b) equal to unity ( )
(c) less than unity ( )
(d) All the above ( )

19. The nearer the 2 regression lines to each other, the ..... is the degree of correlation between the 2 variables.

(a) closer ( )
(b) lesser ( )
(c) higher ( )
(d) All the above ( )

20. In regression analysis, variable which is used to predict the variable of interest is called the ..... variable or ..... variable

(a) dependent ( )
(b) independent ( )
(c) explanatory ( )
(d) All the above ( )
(e) Only (a) and (c) ( )
(f) Only (b) and (c) ( )

Section – B

B. *Short Answer:* Answer any 5 questions.

1. What are discrete and continuous variables? 5 x 1 = 5

2. What is cumulative frequency distribution?

3. Define Histogram.

4. Define Ogive

5. Distinguish between positive and negative correlation

What is limited degree of correlation?

8. What is regression analysis?

9. What are regression coefficients?

10. Give one differences between correlation and regression analysis