

D 12975

(Pages : 5)

Name.....

Reg. No.....

**FIRST SEMESTER M.A./M.Sc. DEGREE (REGULAR) EXAMINATION
NOVEMBER 2020/2021**

(CBCSS)

Econometrics

ECM 1C 04—BASIC STATISTICS AND SAMPLING THEORY

(2020 Admission onwards)

Time : Three Hours

Maximum : 30 Weightage

General Instructions

1. *In cases where choices are provided, students can attend all questions in each section.*
2. *The minimum number of questions to be attended from the Section / Part shall remain the same.*
3. *The instruction if any, to attend a minimum number of questions from each sub section / sub part / sub division may be ignored.*
4. *There will be an overall ceiling for each Section / Part that is equivalent to the maximum weightage of the Section / Part.*

Part A (Multiple Choice Questions)*Answer all questions.**Each question carries 1/5 weightage.*

1. When the amount of change in one variable is not in constant ratio to the change in the other variable :

a) Non-linear correlation.	b) Curvilinear correlation.
c) Either (a) or (b).	d) Neither (a) or (b).
2. The measure of Kurtosis is derived from _____ .

a) Moments.	b) Skewness.
c) Dispersion.	d) None of these.
3. The co-efficient of skewness that is based on Quartiles :

a) Bowley's.	b) Pearson's.
c) Either (a) or (b).	d) None of these.

Turn over

4. Which among the following is/are positional averages ?
- a) Mode.
 - b) Median.
 - c) Mean
 - d) Both (a) and (b).
5. The lowest level of data measurement is _____.
- a) Nominal scale.
 - b) Ordinal scale.
 - c) Interval scale.
 - d) Ratio scale.
6. A data set consists of the GNP growth rate of a country. Which is a better measure of central tendency for the data set :
- a) Arithmetic mean.
 - b) Median.
 - c) Geometric Mean.
 - d) Weighted Arithmetic mean.
7. Quartile Deviation is :
- a) $2/3$ Standard deviation.
 - b) $5/6$ Standard deviation.
 - c) $3/2$ Standard deviation
 - d) None of these.
8. _____ is used as a measure of risk in the stock market.
- a) Quartile deviation.
 - b) Mean Deviation.
 - c) Standard Deviation
 - d) None of these.
9. A distribution which is flatter than the normal distribution is _____.
- a) Mesokurtic.
 - b) Platykurtic.
 - c) Leptokurtic.
 - d) Binomial.
10. Wrong inferences about population based on a sample is _____.
- a) Non Sampling Error.
 - b) Sampling bias.
 - c) Sampling Error.
 - d) None of these.
11. The speed of a car in miles per hour represents :
- a) Continuous data.
 - b) Discrete data.
 - c) Either (a) or (b).
 - d) Neither (a) or (b).

22. Find the first, second, third and fourth moments for the set 4, 7, 5, 9, 8, 3, 6.
23. Find Pearson's Co-efficient of Skewness for the following data Mean = 7, Median = 6.5 and standard deviation 1.48.

(5 × 1 = 5 weightage)

Part C (Short Answer Questions.)*Answer any seven questions.**Each question carries 2 weightage.*

24. Distinguish between Multi stage sampling and Stratified sampling.
25. Find the first, second and third quartile for the frequency distribution :
- | | | | | | | | | |
|-----------|---|----|----|----|----|----|----|----|
| Class | : | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Frequency | : | 10 | 15 | 18 | 25 | 17 | 14 | 8 |
26. Let co variance between X and Y variables is 1.86 and the variance of X and Y are respectively 20.2 and 23.7. Find the co-efficient of correlation between them.
27. State the difference between schedule and questionnaire ?
28. Draw the ogives and locate the median for the following data :
- | | | | | | | | | |
|---------------|---|------|-------|-------|-------|-------|-------|-------|
| Class (marks) | : | 5-15 | 15-25 | 25-35 | 35-45 | 45-55 | 55-65 | 65-75 |
| Frequency | : | 7 | 12 | 17 | 29 | 31 | 5 | 3 |
29. Discuss the merits and demerits of various measures of central tendency.
30. A professional driver drives 10 miles on the highway at 60 miles per hour and 10 miles on sub road at 15 miles per hour. Find the harmonic mean
31. Differentiate between Correlation and Regression.
32. Find 25th percentile and 75th percentile for the following data ?
- | | | | | | | | | | |
|-----------|---|---------|----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Class | : | 9.3-9.7 | 9.8-10.2 | 10.3-10.7 | 10.8-11.2 | 11.3-11.7 | 11.8-12.2 | 12.3-12.7 | 12.8-13.2 |
| Frequency | : | 2 | 5 | 12 | 17 | 14 | 6 | 3 | 1 |
33. Write a note on four scales of measurement ?

(7 × 2 = 14 weightage)

Part D (Essay Type Questions)*Answer any two questions.**Each questions carries 4 weightage.*

34. The following table shows the daily wages earned by males in a certain industry. Find Bowley's co-efficient of skewness :

Daily Wages (in rupees)	:	15-	17-	19-	21-	23-	25-	27-	29-	31-	33-	35-	37-	39-
		17	19	21	23	25	27	29	31	33	35	37	39	41
No: of wage earners	:	60	200	400	600	1400	2000	1800	1000	1000	1000	1800	600	100

35. Rankings of 10 trainees at the beginning (x) and at the end (y) of a certain course are given below:

Trainees	:	A	B	C	D	E	F	G	H	I	J
x	:	1	6	3	9	5	2	7	10	8	4
y	:	6	8	3	7	2	1	5	9	4	10

Calculate Spearman's rank correlation co-efficient.

36. Discuss the least squares method for fitting regression line.
37. Briefly explain the different graphs for presenting a frequency distribution ?

(2 × 4 = 8 weightage)