

D 51830

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Name.....

Reg. No.....

THIRD SEMESTER (CBCSS-UG) DEGREE EXAMINATION, NOVEMBER 2023

Economics

ECO 3B 03—QUANTITATIVE METHODS FOR ECONOMIC ANALYSIS—1

(2019–2022 Admissions)

Time : Two Hours And A Half

Maximum : 80 Marks

Section A (Short Answer Questions)*Maximum marks in this section is 25.**Students can attempt **all** questions.**Each question carries a maximum of 2 marks.*

1. Null Matrix.
2. Frequency tables.
3. Coefficient of variation.
4. Pie diagram.
5. Regression.
6. Spreadsheet.
7. Simple linear regression.
8. Standard deviation.
9. Bar diagram.
10. Simultaneous equations.
11. Scatter diagram.
12. SPSS.
13. Slope and intercept.
14. Kurtosis.
15. Transpose of matrix.

Turn over

Section B (Short Essays/Paragraph Questions)

Maximum marks in this section is 35.

*Students can attempt **all** questions.*

Each question carries a maximum of 5 marks.

16. Differentiate between minor and cofactor of a matrix. Give suitable example.
17. Solve the following simultaneous equations using Crammers' s rule :
$$5x - 6y + 4z = 15$$
$$7x + 4y - 3z = 19$$
$$2x + y + 6z = 46$$
18. Define Correlation. Explains various methods of measuring correlation.
19. Explain the concept of Lorenz curve and crime coefficients with graphical representation.
20. Distinguish between range and coefficient of range. Find the range and coefficient of range of the following data :
25, 67, 48, 53, 18, 39, 44.
21. What do you mean by inverse of a matrix ? Give numerical example.
22. Find the standard deviation and variance for the following data :
57, 64, 43, 67, 49, 59, 44, 47, 61, 59.
23. Explain Skewness. Differentiate between positively skewed and negatively skewed distribution.

Section C (Long Essay Questions)

*Answer any **two** questions.*

Each question carries a maximum of 10 marks.

24. Find the coefficient of correlation for the following data. Interpret the result :
X – 35 40 60 79 83 95
Y – 17 28 30 32 38 49
25. What do you mean by regression lines ? Explain simple linear regression with examples.
26. Illustrate various methods of representation of data graphically. Using numerical example represent each of them.
27. Explain the properties of determinants. Find out determinant of the following matrix :

$$A = \begin{bmatrix} 1 & 2 & 1 \\ 2 & 3 & 1 \\ 1 & 1 & 2 \end{bmatrix}$$

D 51830–A**(Pages : 4)****Name.....****Reg. No.....****THIRD SEMESTER (CBCSS–UG) DEGREE EXAMINATION, NOVEMBER 2023****Economics****ECO 3B 03—QUANTITATIVE METHODS FOR ECONOMIC ANALYSIS—1****(2019–2022 Admissions)****(Multiple Choice Questions for SDE Candidates)****Time : 15 Minutes****Total No. of Questions : 20****Maximum : 20 Marks****INSTRUCTIONS TO THE CANDIDATE**

1. This Question Paper carries Multiple Choice Questions from 1 to 20.
2. The candidate should check that the question paper supplied to him/her contains all the 20 questions in serial order.
3. Each question is provided with choices (A), (B), (C) and (D) having one correct answer. Choose the correct answer and enter it in the main answer-book.
4. The MCQ question paper will be supplied after the completion of the descriptive examination.

ECO 3B 03—QUANTITATIVE METHODS FOR ECONOMIC ANALYSIS—1

(Multiple Choice Questions for SDE Candidates)

1. Which of the following is NOT exponential function ?
 - (A) $f(X) = e^x$.
 - (B) $f(X) = 1^x$.
 - (C) $f(X) = 2^x$.
 - (D) $f(X) = (0.5)^x$.

2. The y -intercept of the function $y = b^x$ is :
 - (A) 0.
 - (B) It has no y -intercept.
 - (C) 1.
 - (D) - 1.

3. Factor $36x^2 - 84x + 49$.
 - (A) $(6x - 7)(6x + 7)$.
 - (B) $(6x - 7)(6x - 7)$.
 - (C) $(6x + 7)(6x + 7)$.
 - (D) $(6x + 7)(6x - 7)$.

4. A diagonal matrix in which all the diagonal elements are equal is called :
 - (A) Unit matrix.
 - (B) Null matrix.
 - (C) Scalar matrix.
 - (D) Triangular matrix.

5. Two matrices A and B are said to be conformable for multiplication only if :
 - (A) The number of rows of A is equal to the number of rows of B.
 - (B) The number of columns of A is equal to the number of columns of B.
 - (C) The number of rows of A is equal to the number of columns of B.
 - (D) The number of columns of A is equal to the number of rows of B.

6. Matrix addition is :
 - (A) Commutative.
 - (B) Associative.
 - (C) Have additive identity.
 - (D) All the above.

7. Determinants are possible only when :
- (A) Number of rows $>$ number of columns.
 - (B) Number of rows $<$ number of columns.
 - (C) Number of rows = number of columns.
 - (D) None of these.
8. For a moderately asymmetrical distribution :
- (A) Mean = median = mode.
 - (B) Mode = 3 median – 2 mean.
 - (C) Mean = 2mode – 3 Median.
 - (D) Median = 2mean – 3 mode.
9. The class having the maximum frequency is called :
- (A) Modal class.
 - (B) Median class.
 - (C) Mean class.
 - (D) None.
10. To compare two or more distributions, we use :
- (A) Absolute measure of dispersion.
 - (B) Relative measure of dispersion.
 - (C) Both (A) and (B).
 - (D) Either (a) or (b).
11. The most commonly used measure of dispersion is :
- (A) Range.
 - (B) Standard deviation.
 - (C) Co-efficient of variation.
 - (D) quartile deviation.
12. If the same amount is added to or subtracted from all the values, standard deviation shall be :
- (A) Changed.
 - (B) Unchanged.
 - (C) Both.
 - (D) None.
13. When the measure of kurtosis is greater than 3, the distribution is :
- (A) Mesokurtic.
 - (B) Leptokurtic.
 - (C) Platy kurtic.
 - (D) Symmetric.

Turn over

14. _____ matrix has 1s on the diagonal and 0s everywhere else.
- (A) Identity. (B) Idempotent.
(C) Square. (D) Null.
15. The _____, denoted r ranges between -1 and $+1$ and quantifies the direction and strength of the linear association between the two variables.
- (A) Standard deviation. (B) Quartile Deviation.
(C) Regression co-efficient. (D) Sample correlation coefficient.
16. The sign of the _____, indicates the direction of the association. The magnitude of the correlation coefficient indicates the strength of the association.
- (A) Standard deviation. (B) Quartile Deviation.
(C) Correlation co-efficient. (D) Regression co-efficient.
17. What would you expect the correlation between daily calorie consumption and body weight to be ?
- (A) Moderate to large positive. (B) Small positive.
(C) Zero or near zero. (D) Small negative.
18. Sanju calculated a correlation coefficient of 0.75. Which of the following reflects the best interpretation of this ?
- (A) Weak negative. (B) Strong negative.
(C) Weak positive. (D) Strong positive.
19. When there is a single continuous dependent variable and a single independent variable, the analysis is called a simple _____ regression analysis.
- (A) Linear. (B) Non-linear.
(C) Curvilinear. (D) Rectangular.
20. The estimated _____ equation can be used to predict the value of the dependent variable given values for the independent variables.
- (A) Correlation. (B) Mean deviation.
(C) Standard deviation. (D) Regression.