THIRD SEMESTER B.A DEGREE EXAMINATION, NOVEMBER 2019
(Regular/Supplementary/Improvement)
(CUCBCSS - UG)
CC15U ECO3 B03 - QUANTITATIVE METHODS FOR ECONOMIC ANALYSIS I
(Economics - Core Course)
(2015 Admission onwards)

Time: Three Hours   Maximum: 80 Marks

Section A
Objective Type Questions.
Answer *all* questions. Each question carries ½ mark.

1. The line $2x + 3y = 0$ is passing through the point.

   a) (2, 3)   b) (3, 2)   c) (-3/2, 0)   d) (0, 0)

2. Break point is a point at which

   a) Total revenue = total cost   b) Average revenue = average

   c) Total cost = average revenue   d) Demand = supply

3. Correlation coefficient lies between

   a) -1 & +1   b) -1 & 0   c) +1 & 0   d) None

4. The trace of the identity matrix is _____

   a) 3   b) 0   c) 1   d) 2

5. The positional average

   a) Mode   b) Median   c) Mean   d) None

6. The logarithm of a negative number is

   a) Positive   b) negative   c) zero   d) cannot be determined

7. If A and B are two matrices then $(AB)^T$ is

   a) AB   b) BA   c) $A^T B^T$ d) $B^T A^T$

8. A qualitative characteristic is also known as _____

   a) Attribute   b) Variable   c) Variate   d) Frequency

9. Sum of the deviation about mean is

   a) Zero   b) minimum   c) maximum   d) one

10. _____ is the best average to analyse speed and rates.

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

11. With the help of Ogive curve one can determine

    a) Median   b) Quartiles   c) Deciles   d) Percentiles

12. If $r = \pm 1$ the two lines of regression are

    a) Coincident   b) Parallel   c) Perpendicular   d) None of these

<div align="center">(12 x ½ = 6 Marks)</div>

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Section B
Very Short Answer Type Questions.
Answer any *ten* questions not exceeding one paragraph. Each question carries 2 marks.

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13. Define Skewness.

14. If $f(x) = x^2 - 3x + 10$. Find $f(-3) - f(2)$

15. Find the determinant of the matrix $A = \begin{bmatrix} 3 & 6 \\ -2 & 4 \end{bmatrix}$

16. Define rank of a matrix.

17. How to find the median by drawing two Ogives ?

18. State any four laws of exponents.

19. If determinant of matrix A is 10. Find the determinant of the matrix 3A

20. Define linear correlation.

21. Solve $x^2 + 9x + 18 = 0$

22. Define Kurtosis.

23. Find the slope of the line $x - \sqrt{3}y = 6$

24. Simplify $x^{a-b}x^{b-c}x^{c-a}$

<div align="center">(10 x 2 = 20 Marks)</div>

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Section C
Short Answer Type Questions.
Answer any *six* questions not exceeding one page. Each question carries 5 marks.

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25. What is a scatter diagram? From the scatter diagram how do you infer the nature of relationship of the variables?

26. Distinguish between regression and correlation.

27. Find the inverse of the matrix $A = \begin{bmatrix} 2 & 3 & -4 \\ 0 & -4 & 2 \\ 1 & -1 & 5 \end{bmatrix}$

28. Define partition value.

29. Calculate median for the given data.

Class	0-10	10-20	20-30	30-40	40-50	50-60
Frequency	6	7	15	16	4	2

30. Find the Mean deviation about Mean and coefficient of Mean Deviation.

x	2	4	6	8	10
y	4	9	15	8	3

31. The demand for a commodity is $D = 35 - 7p$. Form a demand schedule and draw demand curve.

32. Distinguish simple, partial and multiple correlation.

<div align="center">(6 x 5 = 30 Marks)</div>

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Section D
Essay Type Questions.
Answer any *two* questions not exceeding three pages. Each question carries 12 marks.

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33. Ten competitors in a beauty contest are ranked by three judges in following order.

First Judge	1	6	5	10	3	2	4	9	7	8
Second Judge	3	5	8	4	7	10	2	1	6	9
Third Judge	6	4	9	8	1	2	3	10	5	7

    Use correlation coefficient to discuss which pair of judges has nearest approach to common tastes in beauty.

34. The following are the scores of two batsmen A and B in a series of innings.

A	12	115	3	73	7	19	119	36	84	29
B	47	12	75	42	4	51	37	48	13	0

    Who is better batsman? Who is more consistent?

35. Solve the equations using Cramer's Rule

$$6x + y - 3z - 5 = 0$$
$$2x + y + 4z - 8 = 0$$
$$x + 3y - 2z - 5 = 0$$

36. Obtain standard deviation, on the scores given below

Score	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No of students	10	15	25	25	10	10	5

<div align="right">(2 x 12 = 24 Marks)</div>

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