34. Following are the marks obtained by two students A and B in 10 sets of examination

Set	1	2	3	4	5	6	7	8	9	10
Marks obtained by student A	44	80	76	48	52	72	68	56	60	64
Marks obtained by student B	48	75	54	60	63	69	72	51	57	51

Compare their standard deviations and interpret.

35. Obtain the two regression equation from the following data:

X	4	5	6	8	11
Y	12	10	8	7	5

36. From the following data find the Q_1, Q_2 and Q_3.

X	5	10	15	20	25	30	40	45	50
F	20	43	75	76	72	45	39	18	16

$(2 \times 12 = 24$ Marks)

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17U342 (Pages: 3) Name: ……..……

Reg. No……

THIRD SEMESTER B.A. DEGREE EXAMINATION, NOVEMBER 2018

(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

Answer ***all*** questions. Each question carries ½ mark.

1. Any non zero number or variable raised to the zero power ;x^0 is equal to ----------

   a) 0 b) 1 c) x d) none of the above

2. A ---------- matrix is one which there exist linear dependence between at least two rows or columns.

   a) Non Singular b) Singular c) Symmetric d) Null

3. The coefficient of correlation is the -------- of two regression coefficients.

   a) Arithmetic Mean b) Harmonic Mean c) Geometric Mean d) Median

4. ---------- represents the difference between the third quartile and the first quartile.

   a) Range b) Inter Quartile Range

   c) Quartile Deviation d) Mean deviation

5. If a curve is more peaked than the normal curve, it is called ----------

   a) Platykurtic b) Mesokurtic c) Leptokurtic d) None of the above

6. ---------- is used to study the degree of inequality

   a) Ogives b)Lorenze Curve c) Histogram d) Frequency Polygon

7. If $log_5 125 = x$, then x= ----------

   a) 3 b) 5 c) 25 d) 15

8. A function expressed directly in terms of the dependent variable is said to be an ---------- function.

   a) Implicit b) Explicit c) Even d) Odd

9. The distance between two points $(3,1)$ and $(2,2)$ is ----------

   a) 4 b) 2 c) -2 d)1

10. The sum of the squared deviations of the observations from the mean is ----------

    a) Minimum b)Maximum c) Zero d) One

11. The inverse of A is given by A^{-1} is ----------.

a) $\frac{1}{|A|}$ b) $|A|(Adj\ A)$ c) $\frac{1}{|A|}(Adj\ A)$ d) $(Adj\ A)$

12. The variance is ----------.

a) σ b) σ^2 c) Zero d) None

($12 \times ½ = 6$ Marks)

Section B

Answer any ***ten*** questions. Each question carries 2 marks.

13. Solve the equation: $9(3x + 4) - 2x = 11 + 5(4x - 1)$

14. Calculate coefficient of range from the following data:

Marks	10-20	20-30	30-40	40-50	50-60
Frequency	8	10	12	8	4

15. Explain the different steps involved in drawing a Lorenz Curve.

16. Write a note on quartiles.

17. Find the determinant of the following: $A = \begin{bmatrix} 6 & 7 & 9 \\ 10 & 2 & 3 \\ 5 & 4 & 1 \end{bmatrix}$

18. Write a note on :

a. Symmetric matrix.

b. Idempotent matrix.

19. What is coefficient of variation?

20. Obtain the equation and slope of the line joining the two points $(1,2)$ and $(3,4)$

21. Find the rank of the matrix A = $\begin{vmatrix} 5 & 7 \\ 3 & 1 \end{vmatrix}$

22. Solve $\left(\frac{x^4y^3}{x^2y^5}\right)\left(\frac{x^2y}{xy}\right)$

23. Find median of the following data:

Sl.No.	1	2	3	4	5	6	7	8
Marks	45	25	19	33	20	10	8	15

24. Interpret correlation coefficient.

($10 \times 2 = 20$ Marks)

Section C

Answer any ***six*** questions. Each question carries 5 marks.

25. Draw a less than ogive from the given data below:

Profits	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
No. Of Companies	4	7	13	20	25	15	8	5	2

26. Find the inverse of the matrix $A = \begin{bmatrix} 4 & 2 & 6 \\ 2 & 3 & 1 \\ 5 & 7 & 1 \end{bmatrix}$

27. Write the properties of determinants.

28. Solve the following equation $5x^2 + 14x - 3 = 0$

29. Explain different types of correlation.

30. Find the Spearman's rank correlation from the following data of marks of 10 students in an examination:

X	88	57	68	44	76	30	95	54	62	70
Y	72	80	42	66	51	25	60	55	37	78

31. Write a note on :

a. Symmetric distribution.

b. Positively Skewed distribution.

c. Negatively Skewed distribution.

32. Find the equilibrium price and quantity from the following functions

$D = -18 + 2p + p^2$ and $S = -4p - 2$

($6 \times 5 = 30$ Marks)

Section D

Answer any ***two*** questions. Each question carries 12 marks.

33. Use matrix inverse method to solve for the unknowns in the system of linear equations given below:

$$x + 3y + 3z = -1$$
$$2x + 3y + 2z = 1$$
$$4x + 2y + z = -1$$