

Roll No.....

Total No. of Questions : 13]

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Paper ID [B0204]

(Please fill this Paper ID in OMR Sheet)

MBA (104) (Old / S05) (Sem. - 1st)

QUANTITATIVE TECHNIQUES

Time : 03 Hours

Maximum Marks :75

Instructions to Candidates:

- 1) Section - A is **Compulsory**.
- 2) Attempt any **Nine** questions from Section - B.

Section - A

Q1)

(15 x 2 = 30)

- a) Role of statistics in business decisions.
- b) Finite and infinite sets.
- c) Transpose and inverse of a matrix.
- d) Harmonic Mean and Geometric Mean.
- e) Quadratic Equation.
- f) Seasonal variations.
- g) Rank correlation.
- h) Difference between mean deviation and standard deviation.
- i) Properties of correlation.
- j) Properties of regression coefficients.
- k) Chain base method of construction of index numbers.
- l) Independent and mutually exclusive events.
- m) Characteristics of Binomial distribution.
- n) Point estimator.
- o) Chi-square test.

Section - B

(9 x 5 = 45)

Q2) If A and B are any two sets, then prove:

- (a) $A \cap B \subset A$
- (b) $A \cap B \subset B$
- (c) $A - B = A - (A \cap B)$
- (d) $A \cup B = (A - B) \cup B$
- (e) $B - A^c = B \cap A$

Q3) Solve the following system of equations:

$$x - y + z = 2$$

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

$$3x - y + 2z = 9$$

Q4) The sum of three consecutive terms of an A.P is 15 and their product is 105. Find the numbers.

Q5) The sum of four numbers in G.P is 60 and the arithmetic mean between the first and the last is 18. Find the numbers.

Q6) Explain the various measures of Central tendency.

Q7) Given the following data, estimate

- (a) The value of 'Y' when 'X' = 70.
- (b) The value of 'X' when 'Y' = 90

Coefficient of correlation = 0.8.

Q8) Distinguish giving suitable examples between:

- (a) Positive and negative correlation.
- (b) Linear and non-linear correlation.

Q9) Calculate the quartile deviation for the following frequency distribution:

X	:	60	62	64	66	68	70	72
Frequency	:	12	16	18	20	15	13	9

Q10) Explain the meaning and importance of time series. Also explain cyclical variations.

Q11) Two balls are drawn from a bag containing 8 red and 7 white balls. Find the chance that (a) they are both red; (b) they are both white; and (c) one is red and the other white.

Q12) Explain the properties of a normal distribution.

Q13) From the following data, use χ^2 test and conclude whether inoculation is effective in preventing tuberculosis:

	<u>Attacked</u>	<u>Not Attacked</u>	<u>Total</u>
Inoculated:	31	469	500
Not Inoculated :	185	1315	1500
Total	<u>216</u>	<u>1784</u>	<u>2000</u>

