

**MP-304/204 (New)**

June - Examination 2017

**Master of Business Administration - II Year Examination****Quantitative Techniques****Paper - MP-304/204 (New)****Time : 3 Hours ]****[ Max. Marks :- 80**

**Note:** The question paper is divided into three sections A, B and C. Write answers as per given instructions.

**Section - A****8 × 2 = 16**

(Very Short Answer Type Questions)

**Note:** Answer **all** questions. As per the nature of the question delimit your answer in one word, one sentence or maximum upto 30 words. Each question carries 2 marks.

- 1) (i) What is Null or Zero Matrix?
- (ii) State the term Scalar Matrix.
- (iii) What is Positive Correlation?
- (iv) Find value of  ${}_{19}C_{17}$ .
- (v) Explain Base year shifting.
- (vi) In how many different ways the word AGRA can be arranged?

(vii) Define Event.

(viii) In Linear Programming explain Dual.

### Section - B

$4 \times 8 = 32$

(Short Answer Questions)

**Note:** Answer **any four** questions. Each answer should not exceed 200 words. Each question carries 8 marks.

2) If  $A = \begin{bmatrix} 2 & 3 & 4 \\ 3 & 4 & 1 \\ 4 & 5 & 2 \end{bmatrix}$  and  $B = \begin{bmatrix} 1 & 1 & 2 \\ 2 & 3 & 1 \\ 3 & 4 & 2 \end{bmatrix}$

find  $[A + B]$  and  $[A - B]$

3) Define Calculus and Integration. Give properties of the definite integrals.

4) What is meant by “Business Forecasting”? Describe in brief the important theories of business forecasting.

5) Calculate coefficient of correlation from the data given below:

X 14 12 9 8 10 11 13 7

Y 15 14 8 6 9 11 12 3

6) There are 30 students in M.Com. and 50 students in B.Com. in the college. Three representatives of Commerce Association are to be selected one by one. Find the probability that they are alternatively of different classes.

- 7) Explain some methods, which are useful for decision making under condition of uncertainty. Illustrate each by an example.
- 8) “The game theory provides the basis for a rational decision”. Do you agree with this statement? Answer with reasons.
- 9) A Company produces three kinds of fans A, B and C. The monthly production is 100 units, 200 units and 300 units respectively. These fans are sold through three stores X, Y and Z. Which have demand of 125, 250 and 225 units respectively. The profit per unit of fans sold to each of three stores is given below:

		Stores		
		X	Y	Z
Fans	A	15	16	18
	B	10	8	6
	C	12	9	10

80 fans of type “A” must be supplied to store X plan the production programme so as to maximise the profit.

### Section - C

**2 × 16 = 32**

(Long Answer Questions)

**Note:** Answer **any two** questions. You have to delimit your each answer maximum upto 500 words. Each question carries 16 marks.

- 10) Discuss the role and scope of quantitative methods for scientific decisions in business management. Also discuss their limitations in relation to rural management.

- 11) Two random variables have the regression equations  $3x + 2y - 26 = 0$  and  $6x + y - 31 = 0$ . Find the mean values and the coefficient of correlation between  $x$  and  $y$ .

If the variance of  $x = 25$ , find standard deviation ( $\sigma y$ ) of  $y$  from the data given above.

- 12) What is probability? Explain its different concept giving suitable examples.
- 13) Solve the following linear programming problem by taking it's Dual.

$$\begin{aligned} \text{Minimize } Z &= 2x_1 + 2x_2 \\ \text{Subject to } & 2x_1 + 4x_2 \geq 1 \\ & x_1 + 2x_2 \geq 1 \\ & 2x_1 + x_2 \geq 1 \\ & x_1, x_2 \geq 0 \end{aligned}$$


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