

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

June - Examination 2016

**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 the given instructions.

**Section - A****8 × 2 = 16**

(Very Short Answer 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) Find the 10<sup>th</sup> term of A.P. 2, 8, 14, 20 .....
- (ii) What is inverse matrix?
- (iii) State the meaning of correlation.
- (iv) What is meant by analysis of time series?
- (v) Find the value of  $20_{C_3}$ .

- (vi) In how many ways five persons can sit on eight seats?
- (vii) Define operation research.
- (viii) What is the meaning of “Event” in a network diagram.

### Section - B

4 × 8 = 32

(Short Answer Questions)

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

2) Prove that

$$A^{-1} = \begin{bmatrix} 1 & -1 & 2 \\ 0 & 3 & 1 \\ 0 & 0 & -\frac{1}{3} \end{bmatrix}, \text{ then } A = \begin{bmatrix} 1 & \frac{1}{3} & 7 \\ 0 & \frac{1}{3} & 1 \\ 0 & 0 & 3 \end{bmatrix}$$

- 3) Discuss the role and scope of quantitative methods for scientific decisions in business management.
- 4) “Index numbers are economic barometers”. Explain this statement and mention what precautions should be taken in making use of any published index numbers?
- 5) Calculate coefficient of correlation between X and Y series by Karl Pearson’s method.

X-Series	10	12	15	18	25	35	45	50	55	65
Y-Series	5	7	13	15	20	21	29	30	36	44

- 6) What is the probability of getting a total of atleast 9 in a single throw of two dice?

- 7) Indicate the difference between decision making under risk and uncertainty in statistical decision theory.
- 8) Solve the following two person, zero sum game:

		Player B		
		B <sub>1</sub>	B <sub>2</sub>	B <sub>3</sub>
Player A	A <sub>1</sub>	5	7	11
	A <sub>2</sub>	2	(-)1	8
	A <sub>3</sub>	18	(-)6	10

- 9) “Operations Research provides a tool for scientific analysis.” Discuss.

### 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) (i) Describe the situations where quantitative techniques can be used.
- (ii) Give any three useful definitions of quantitative techniques and explain them.
- 11) Explain the term “regression” and its utility in economic analysis. How are regression equation derived? Explain by an example.

- 12) The marks of the students are normally distributed. 10% get more than 75 marks and 20% get less than 40 marks. Find the mean and standard deviation of the distribution.

The relevant extract of Area Table (Under the normal curve) is given below.

Z	0.84	1.28	2.00
Area	0.2995	0.3997	0.4772

- 13) A project consists of the following activities

Activity	1-2	1-3	1-4	2-5	2-6	3-6	4-7	5-7	6-7
to	3	2	6	2	5	3	3	1	2
tm	15	14	30	8	17	15	27	7	8
tp	6	5	12	5	11	6	9	4	5

- (i) Draw the network
- (ii) Determine critical path
- (iii) Determine the expected time and variance for each activity.

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