MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)
MBA I Year I Semester (R16) Supplementary End Semester Examinations – JUNE 2019
QUANTITATIVE TECHNIQUES

Time: 3Hrs   Max Marks: 50

> Attempt all the questions. All parts of the question must be answered in one place only.
> **In Q.no 1 to 5 answer either Part A or Part B only. Q.no 6 which is a case study is compulsory.**

Q.1(A) Solve the following system of equations x-2y+3z=1; 3x-y+4z=3; 2x+y-2z= -1.   8M

OR

Q.1(B) In a survey of 600 families, the following information is obtained. 300 families read Times   8M
of India, 294 read Indian Express, and 168 families read both the papers. Find
    (i)   The number of families who read at least one news paper
    (ii)   The number of families who read none of the two news papers.

Q.2(A) Find the mean and median for the following data   8M

Wages (in 000'Rs)	0-5	5-10	10-15	15-20	20-25	25-30	30-35
Number of workers	8	5	17	34	20	12	9

OR

Q.2(B) Find the bowley's coefficient of skewness from the following data   8M

Profit (Rs.Crores)	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Number of companies	10	14	18	24	16	12	6

Q.3(A) i. What is rank correlation? Explain the spearman's method   8M
ii. Find rank correlation co-efficient for the following data

X	92	89	86	87	83	71	86	63	53	60
Y	86	83	77	91	68	52	68	85	57	60

OR

Q.3(B) For the given data, obtain the regression equations: 8M

Sales	91	97	103	121	67	124	51	73	111	57
Purchase	97	75	69	97	70	91	39	61	83	47

Q.4(A) Two cards are drawn from a pack of playing cards at random. What is the   8M
probability that drawn cards will be
    i)   a diamond and a heart
    ii)   a king and a queen
    iii)   two kings?

OR

Q.4(B) In a bolt factory machines M_1, M_2, M_3 manufacture 25%, 35% and 40% of the total. 8M
of their output 5%, 4% and 2% are defective bolts. A bolt is drawn at random from
the product and is found to be defective. What are the probabilities that it was
manufactured by machines A, B?

Q.5(A) 2% of the items of a factory are defective. The items are packed in boxes. What is 8M
the probability that in a box of 100 items
(i) Exactly 2 (ii) at least 2 (iii at most 2 (iv) none (v) one are defective

OR

Q.5(B) In a sample of 1000 cases, the mean of a certain test is 14 and standard deviation is 8M
2.5. Assuming the distribution to be normal, find
(i)   How many score above 18 marks?
(ii)   How many score between 12 and 15 marks?
(iii)   How many score below 18 ?

Q.6   **Case Study**   10M
Give below is the data of 30 Indian companies for the dividend declared (%) during
a particular year. This data has been collected for three broad categories of
industries, viz textiles, engineering and pharmaceutical from published sources. In
each industry ten companies have been chosen.

	Textiles	Engineering	Pharmaceutical
Company-1	13	16	20
Company-2	14	15	23
Company-3	16	18	25
Company-4	18	19	25
Company-5	16	15	24
Company-6	16	19	23
Company-7	22	16	26
Company-8	19	20	23
Company-9	15	16	24
Company-10	11	16	27

From the above data
(i) Find the average dividend declared for each industry.
(ii) Find coefficient of variation for each industry.
(iii) Interpret the results.

END