Roll No.:							

GSCN/W-2019/SEM-II/MBC2.4

Shiksha Mandal, Wardha's

G. S. College of Commerce & Economics, Nagpur

An Autonomous Institution

(Affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)

Second Semester Master of Business Administration Examination (CBCS)

QUANTITATIVE TECHNIQUES FOR BUSINESS

(MBC 2.4)

Time: 3 Hours | Maximum Marks: 80

Note: a) All Questions are compulsory.

b) Draw well labeled diagrams wherever necessary.

Q.1 A) The mean marks obtained by 90 students are 59. There are 40 girl students. If the mean marks of girl students are 64, obtain mean marks of boy students. 10

OR

B) Find out the mode by grouping method for the following data.

X (Above)	10	20	30	40	50	60	70	80
f	5	3	8	9	15	10	8	9

Q.2 A) Compute the coefficient of correlation for the following data through Karl Pearson's method. 10

X	25	35	45	52	20	33	40	30
Y	20	15	10	14	23	18	22	30

OR

B) From the following data find out the Spearman's rank correlation and comment on the result.

Roll Nos.	1	2	3	4	5	6	7	8	9	10
Marks in Commerce	60	56	25	90	35	14	52	27	54	72
Marks in Economics	42	34	56	35	40	50	45	60	58	36

Q.3 A) A class consists of 10 boys and 20 girls of which half the boys & half the girls have blue eyes. Find the probability that a student chosen at random is a boy or has blue eyes. 10

OR

B) Suppose that a bag contains 30 balls of which 8 are red, 3 are white, 7 are yellow and 12 are black. Find the probability of getting a white and a black ball.

Q.4 A) Given below are the figures of production (in lakh Kg.) of a sugar factory. 10

Year	1971	1972	1973	1974	1975	1976	1977
Production	40	45	46	42	47	50	46

Fit a straight line trend by the least squares method and tabulate the trend.

OR

B) Predict the sales for the year 2003 with the help of graph for the following data by the method of semi averages.

Year	1993	1994	1995	1996	1997	1998	1999	2000
Sales	100	105	109	96	102	108	112	114

Q.5 A) A certain type of surgical operation can be performed either with a local anesthetic or with a general anesthetic. Results are given below: 10

	Alive	Dead
Local	511	24
General	147	18

Use $\varkappa^2$ test for testing the difference in the mortality rates associated with the different types of anesthetic. (Value of chi-square at 5% level of significance with 1 d.f. is 3.84)

OR

B) 200 digits were chosen at random from a set of tables. The frequencies of the digits are:

Digits	0	1	2	3	4	5	6	7	8	9	Total
Freq.	18	19	23	21	16	25	22	20	21	15	200

Use $\varkappa^2$ test to assess the correctness of the hypothesis that the digits were distributed in equal numbers in the tables from which they were drawn. (Table value of $\varkappa^2$ is 16.919 at 5% level of significance and 9 degrees of freedom.)

Q.6 A) A company has appointed 4 salesmen, A, B, C and D and observed their sales in three seasons – summer, winter and monsoon. The figures in lakhs are given in the following table. 10

Season	Salesmen				Season's total
	A	B	C	D	
Summer	36	36	21	35	128
Winter	28	29	31	32	120
Monsoon	26	28	29	29	112
Salesmen's total	90	93	81	96	360

Using 5% level of significance, perform an analysis of variance on the above data & interpret the results.

OR

B) There are four classes using different methods of programmed learning of business statistics. All the four classes were given an identical test and the students were graded on a 10-point basis. Samples of size 5 were drawn from each class. The data are as follows:

Methods	Grades				
I	3	4	3	2	3
II	3	6	6	7	3
III	5	7	8	8	7
IV	9	8	9	9	10

Determine whether there is a significant difference in the results of the different methods. (Using 5% level of significance)

Q.7 Answer the following questions in about 75-100 words: (Any five) 20

A) Explain whether statistics is a Science or an Art.

B) What are the different types of Correlation? Explain.

C) Write down the applications of Probability in business.

D) What are the advantages of Time Series Analysis?

E) What are the various applications of Chi-square test?

F) Explain one way classification of ANOVA.

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