Sanjay Ghodawat University, Kolhapur

2019-20

Established as State Private University under Govt. of Maharashtra. Act No XL, 2017

Year and Program 2019-20 **School of Commerce and Management** **Department BBA**

BBA-I

Course Code MBC104(back) **Course Title Quantitative Techniques for Management** **Semester – Odd (I)**

Day and Date Tuesday 24/12/19 **End Semester Examination** **Time: 3 hrs, Max Marks: 100** 10.30am to 1.30 pm

Instructions: 1) All Questions are compulsory.
2)Use of scientific- non programmable calculator is allowed

			Marks	Level	COs
Q.1	a)	True & False (any 5)			
		1) Statistics are numerical statements of facts	10	L1	CO1, CO2, CO3
		2) The index numbers are termed as economic barometers which reflects changes over specified period of time and used in economic planning			
		3) Average is a single value or location around which individual items cluster			
		4) Mode=2Median-3Mean			
		5) If the values of two variables deviate in the same direction then that is called as positive correlation			
		6) The scatter diagram is comprehensible way of locating relationship between two variables			
	b)	Answer the short questions (any 5)	10	L1	CO4, CO5, CO6
		1) Define line of regression of y on x with equation.			
		2) Discuss meaning and significance of linear regression			
		3) Define time series and its significance			
		4) Mention merits and demerits of semi-average method			
		5) Explain the uses and limitations of index numbers			
		6) Define index numbers and mention its types.			
Q.2		Solve the following			
	a)	Below is the frequency distribution of marks in mathematics obtained by 100 students in class. Draw OGIVE Curve for the Same.	10	L1	CO1

Marks	No. of Students	Marks	No. of Students
20-29	7	60-69	9
30-39	11	70-79	14
40-49	24	80-89	2
50-59	32	90-99	1

OR

ESE

a) Draw the Percentage bar chart for family expenses for different variables of Family A & Family B. 10 L1 CO1

Variables	A	B	C	D	E
Family A (Expenses In %)	13	24	15	39	9
Family B (Expenses In %)	19	31	22	17	11

b) Calculate the Median of the distribution of the marks secured by some students in certain examination. 10 L2 CO2

Marks	No. Of Students
0-10	10
10-20	15
20-30	30
30-40	25
40-50	25
50-60	20

OR

b) Calculate Mode of the following available data 10 L2 CO2

Class	Frequency	Class	Frequency
100-110	4	150-160	25
110-120	7	160-170	16
120-130	15	170-180	10
130-140	24	180-190	6
140-150	40	190-200	3

Q.3 Solve the following

a) Calculate Karl Pearson's correlation coefficient by using following data.Comment on the relationship between these two variables. 10 L4 CO2

X	43	44	46	40	44	42	45	42	38	40	42	57
Y	29	31	19	18	19	27	27	29	41	30	26	10

OR

ESE

a) Calculate Spearman's rank correlation coefficient from the data given below.Comment on the relationship between these two variables. 10 L4 CO2

Economics	78	36	98	25	75	82	92	62	65	39
Statistics	84	51	91	69	68	62	86	58	35	49

b) You are given the data relating to experience of machine operators and their performance rating 10 L2 CO2
Obtain regression coefficients b_{xy}, b_{yx}
Calculate correlation coefficient on the above basis

Experience (years) x	**Performance ratings y**
16	87
12	88
18	89
4	68
3	78
10	80
5	75
12	83

OR

b) You are given the data relating to purchases and sales. 10 L2 CO3
Obtain two regression equations and estimate the likely sales when the purchases equal to 100

Purchases	**sales**
62	112
72	124
98	131
76	117
·81	132
56	96
76	120
92	136
88	97
49	85

ESE

Q.4 Solve any Two

a) Determine trend of following data and estimate the value for 2000 with the help of semi-averages method — 10 L2 CO3

Years	Sales (Thousand Units)
1993	20
1994	24
1995	22
1996	30
1997	28
1998	32

b) Fit a straight line by the method of least squares and write down trend values — 10 L2 CO3

Years	Production(Thousand Units)
1999	77
2000	88
2001	94
2002	85
2003	91
2004	98
2005	90

c) Determine trend of following data and estimate the value for 1999 with the help of semi-averages method — 10 L2 CO3

Years	value
1990	170
1991	231
1992	261
1993	267
1994	278
1995	302
1996	299
1997	298
1998	340

Q.5 Solve any Two

a) 10 L3 CO4

From the data given below Calculate Fishers price index number

	Base Year		Current Year	
	Price	**Quantity**	**Price**	**Quantity**
A	2	20	5	15
B	4	4	8	5
C	1	10	2	12
D	5	5	10	6

b) From the data given below calculate Laspeyre's, Paasche's & Fishers price index number for the year 2000 by considering 1999 as base year: 10 L3 CO5

Commodity	**Year 1999**		**Year 2000**	
	Price	**Quantity**	**Price**	**Quantity**
A	5	25	6	30
B	10	5	15	4
C	3	40	2	50
D	6	30	8	35

c) From the data given below calculate Laspeyre's, Paasche's & Fishers quantity index number for the year 2000 by considering 1995 as base year: 10 L3 CO6

Commodity	**Year 1995**		**Year 2000**	
	Price	**Quantity**	**Price**	**Quantity**
A	5	100	6	150
B	4	80	5	100
C	2.5	60	5	72
D	12	30	9	33

*****

ESE