

	<b>Sanjay Ghodawat University, Kolhapur</b>		2018-19
	Established as State Private University under Govt. of Maharashtra. Act No XL, 2017		
<b>Year and Program</b> 2018-19, B.B.A.-I	<b>School of Commerce and Management</b>	<b>Department B.B.A.-I</b>	
<b>Course Code - MBC104</b>	<b>Course Title</b> Quantitative Technique For Management	<b>Semester – Even (II)</b>	
<b>Day and Date</b> Wednesday, 22 <sup>nd</sup> May	<b>End Semester Examination</b>	<b>Time: 3 hrs, Max Marks: 100</b> 10:30 am to 1:30 pm	

- Instructions:**
- 1) All Questions are compulsory.
  - 2) Step wise calculation with correct figures will get full marks.

	Marks	Level	COs
<b>Q.1 a) True or False attempt any five.(2x5)</b>	10		
1) Statistics does not study the individuals.		L1	CO2
2) Data classification is the process of arranging the data in to sequence and groups according to their common characteristics.		L1	CO2
3) Median is that value of the variable which divides the group in to three equal parts.		L1	CO2
4) Range is the difference between the smallest to greatest observation in the series.		L1	CO2
5) Price and Demand is an example of positive correlation.		L1	CO2
6) Pearson correlation coefficient cannot exceed 1 numerically.		L1	CO2
<b>b) Answer the short questions attempt any five.(2x5)</b>	10		
1) What is Linear Regression?		L2	CO2
2) Explain the use of Regression equations in Business.		L2	CO2
3) Explain semi average method of time series analysis.		L2	CO2
4) What are the components of time series analysis.		L2	CO2
5) What are Index number ?		L2	CO2
6) Discuss on price and quantity index number.		L2	CO2
<b>Q.2 Solve the following</b>			
a) The following table gives frequency distribution of marks obtained by 265 students in Exam. Draw the Histogram & Frequency polygon.	10	L2	CO1

**ESE**

<b>Class</b>	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90
<b>Frequency</b>	17	24	35	47	50	37	26	19	10

OR

- a) The monthly profits (Rs. Lakhs) earned by 120 companies during the financial year 2018-2019 are given in the table below:  
Draw less than and more than OGIVE curve. 10 L2 CO1

<b>Monthly Profits in Rs. Lakhs</b>	0-20	20-40	40-60	60-80	80-100	100-120	120-140	140-160
<b>Number of Companies</b>	3	7	15	35	29	14	10	7

- b) Given below is the distribution of marks obtained by 175 students in an examination. Calculate the Mean & Mode of the following data 10 L2 CO1

Class	Frequency
10-20	14
20-30	21
30-40	38
40-50	12
50-60	26
60-70	30
70-80	25
80-90	9

OR

- b) During 10 weeks of a session the marks obtained by two candidates, Ram & Amit for a program is given below. Find who is more consistent? 10 L2 CO1

<b>Ram</b>	58	59	60	54	65	66	52	75	69	52
<b>Amit</b>	87	89	78	71	73	84	65	66	56	46

**Q.3** Solve the following

- a) Calculate Karl Pearson's correlation coefficient from the following data. 10 L2 CO3

<b>Price</b>	14	16	17	18	19	20	21	22	23
<b>Demand</b>	84	78	70	75	66	67	62	58	60

OR

**ESE**

- a) Calculate Spearman's rank correlation coefficient between advertisement cost and sales from the following data, 10 L2 CO3

Advertisement cost (in '000Rs.)	39	65	60	92	82	75	25	98	36	78
Sales in (lakhs Rs.)	47	53	58	86	62	68	60	91	51	84

- b) From the following data obtain the two regression equation, 10 L3 CO3

Sales	91	97	108	121	67	124	51	73	111	57
Purchases	71	75	69	97	70	91	39	61	80	47

OR

- b) The following data gives age and blood pressure of 10 women. 10 L3 CO3  
Estimate the blood pressure of women whose age is 45.

Age (x)	56	42	36	47	49	42	60	72	63	55
Blood Pressure (y)	147	125	118	128	145	140	155	160	149	150

**Q.4 Solve any Two**

- a) Fit the straight line trend for the following data and estimate the value of output for the year 2007. 10 L3 CO4

Year	1997	1998	1999	2000	2001	2002	2003
Production of steel (In Million tons)	60	72	75	65	80	85	95

- b) Apply the semi average method and determine the trend value for the year 2000. 10 L3 CO4

Year	1993	1994	1995	1996	1997	1998
Sales (In thousands)	20	24	22	30	28	32

- c) Apply 5 yearly moving average method and compute trend values. 10 L3 CO4

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Value	130	127	124	135	140	132	129	127	145	158	153	146	145	164	170

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**Q.5 Solve any Two**

- a) From the data given below construct price index number by Fishers ideal formula. 10 L4 CO4

Commodities	Base Year (1995)		Current Year(2000)	
	Price Per Unit (Rs)	Expenditure (Rs)	Price Per Unit (Rs)	Expenditure (Rs)
A	2	40	5	75
B	4	16	8	40
C	1	10	2	24
D	5	25	10	60

- b) Compute laspeyre's and Paasche's Price Index Number for 2000 by considering 1999 as base year for the data given Below, 10 L4 CO4

Commodities	Price		Quantity	
	1999	2000	1999	2000
A	4	10	50	40
B	3	9	10	2
C	2	4	5	2

- c) Compute the Marshall-Edgeworth Price Index Number for the data given Below, 10 L4 CO4

Year	A		B		C	
	Price	Quantity	Price	Quantity	Price	Quantity
1970 Base Year	9.3	100	6.4	11	5.1	5
1977 Current Year	4.5	90	3.7	10	2.7	3

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**ESE**