



SOMAIYA

VIDYAVIHAR UNIVERSITY

Dr. Shantilal K. Somaiya School of Commerce and Business Studies

QUESTION PAPERS

BRANCH: Bachelor of Commerce (Data Analytics)	SEM: III
ATKT	APR-2026

Sr. No.	Subject	Available
1.	131U76K301 – Statistical Techniques	
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		



LIBRARY



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Sem - III
ATKT

10 APR 2026

Semester (April 2026)		
Examination: End Semester Examination Nov. 2026 (UG Programmes)		
Programme code: 77	Class: SY	Semester: III
Programme: Bcom Data Science		
Name of the Constituent College:	Name of the Department Commerce	
Course Code: 131U76K301	Name of the Course: Statistical Techniques	
Duration : 2 Hrs.	Maximum Marks : 60	
Instructions: 1) Figures to the right indicate maximum marks. 2) Use of calculator is allowed. 3) Graph papers will be provided on request.		

Questi on No.		Max. Mark s	Co Attain ment																																		
Q.1	For following data estimate y when x=18 also estimate x when y=24. <table border="1"> <tr> <td>X</td> <td>9</td> <td>5</td> <td>11</td> <td>15</td> <td>10</td> <td>13</td> <td>16</td> </tr> <tr> <td>Y</td> <td>11</td> <td>8</td> <td>14</td> <td>20</td> <td>13</td> <td>15</td> <td>22</td> </tr> </table>	X	9	5	11	15	10	13	16	Y	11	8	14	20	13	15	22	15	CO2																		
X	9	5	11	15	10	13	16																														
Y	11	8	14	20	13	15	22																														
OR																																					
Q.1 a)	For following bivariate data, estimate y when x=63 also estimate x when y=50 Mean of x=65 Mean of y=53 Standard deviation of x=4.7 Standard deviation of y=5.2 Coefficient of correlation=0.78	08	CO2																																		
Q.1 b)	Find most probable value of x when y=18 for following data <table border="1"> <tr> <td>X</td> <td>3</td> <td>4</td> <td>6</td> <td>10</td> <td>12</td> <td>13</td> </tr> <tr> <td>Y</td> <td>12</td> <td>11</td> <td>15</td> <td>16</td> <td>19</td> <td>17</td> </tr> </table>	X	3	4	6	10	12	13	Y	12	11	15	16	19	17	07	CO2																				
X	3	4	6	10	12	13																															
Y	12	11	15	16	19	17																															
Q.2	Find Laspeyres, Paasches, Fishers and Dorbish-Bowley Index numbers for following data, <table border="1"> <thead> <tr> <th rowspan="2">Commodity</th> <th colspan="2">Base year</th> <th colspan="2">Current year</th> </tr> <tr> <th>Price</th> <th>Quantity</th> <th>Price</th> <th>Quantity</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>4</td> <td>15</td> <td>5</td> <td>20</td> </tr> <tr> <td>B</td> <td>8</td> <td>20</td> <td>12</td> <td>30</td> </tr> <tr> <td>C</td> <td>6</td> <td>25</td> <td>8</td> <td>20</td> </tr> <tr> <td>D</td> <td>6</td> <td>3</td> <td>8</td> <td>4</td> </tr> <tr> <td>E</td> <td>14</td> <td>2</td> <td>20</td> <td>3</td> </tr> </tbody> </table>	Commodity	Base year		Current year		Price	Quantity	Price	Quantity	A	4	15	5	20	B	8	20	12	30	C	6	25	8	20	D	6	3	8	4	E	14	2	20	3	15	CO3
Commodity	Base year		Current year																																		
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A	4	15	5	20																																	
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C	6	25	8	20																																	
D	6	3	8	4																																	
E	14	2	20	3																																	
OR																																					
Q.2 a)	Fit straight line trend using Least square method <table border="1"> <thead> <tr> <th>year</th> <th>No. of units</th> </tr> </thead> <tbody> <tr> <td>1997</td> <td>75</td> </tr> <tr> <td>1998</td> <td>82</td> </tr> <tr> <td>1999</td> <td>85</td> </tr> <tr> <td>2000</td> <td>90</td> </tr> <tr> <td>2001</td> <td>98</td> </tr> <tr> <td>2002</td> <td>102</td> </tr> <tr> <td>2003</td> <td>120</td> </tr> </tbody> </table>	year	No. of units	1997	75	1998	82	1999	85	2000	90	2001	98	2002	102	2003	120	10	CO3																		
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Q.2 b)	Find cost of living index number for following data <table border="1" data-bbox="240 170 962 436"> <thead> <tr> <th>Commodity</th> <th>Weights</th> <th>Index Number</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>45</td> <td>300</td> </tr> <tr> <td>B</td> <td>15</td> <td>200</td> </tr> <tr> <td>C</td> <td>10</td> <td>250</td> </tr> <tr> <td>D</td> <td>12</td> <td>150</td> </tr> <tr> <td>E</td> <td>18</td> <td>200</td> </tr> </tbody> </table>	Commodity	Weights	Index Number	A	45	300	B	15	200	C	10	250	D	12	150	E	18	200	05	CO3
Commodity	Weights	Index Number																			
A	45	300																			
B	15	200																			
C	10	250																			
D	12	150																			
E	18	200																			
Q.3	For a binomial variable x , $n=8$, $P(x=2) = 16 P(x=6)$, determine the values of p and q also find, <ol style="list-style-type: none"> $P(x=4)$ $P(x \leq 3)$ $P(x \geq 5)$ Mean Variance 	15	CO1																		
OR																					
Q.3 a)	A committee of 5 persons is to be formed from a group of 8 boys and 7 girls. What is the probability that the committee consists of, <ol style="list-style-type: none"> Exactly one girl Atleast 2 boys No boys 	07	CO1																		
Q.3 b)	For following probability distribution find $E(X)$ and $V(X)$. <table border="1" data-bbox="240 999 1203 1077"> <tbody> <tr> <td>X</td> <td>0</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>P</td> <td>0.2</td> <td>0.25</td> <td>0.2</td> <td>0.15</td> <td>0.1</td> <td>0.1</td> </tr> </tbody> </table>	X	0	1	2	3	4	5	P	0.2	0.25	0.2	0.15	0.1	0.1	08	CO1				
X	0	1	2	3	4	5															
P	0.2	0.25	0.2	0.15	0.1	0.1															
Q.4)	Answer ANY THREE of the following	15	CO1,2,3																		
1.	Define seasonal indices with example.																				
2.	Find 3 yearly moving averages for following data <table border="1" data-bbox="240 1267 1203 1352"> <tbody> <tr> <td>Year</td> <td>1996</td> <td>1997</td> <td>1998</td> <td>1999</td> <td>2000</td> <td>2001</td> </tr> <tr> <td>sales</td> <td>15</td> <td>14</td> <td>12</td> <td>14</td> <td>12</td> <td>11</td> </tr> </tbody> </table>	Year	1996	1997	1998	1999	2000	2001	sales	15	14	12	14	12	11						
Year	1996	1997	1998	1999	2000	2001															
sales	15	14	12	14	12	11															
3.	Illustrate properties of Normal curve.																				
4.	Define sample space and sample points with example.																				
5.	Explain in brief various index numbers.																				