



SOMAIYA

VIDYAVIHAR UNIVERSITY

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

QUESTION PAPERS

BRANCH: Bachelor of Commerce (HONS)	SEM: IV
ATKT	APR-2026

Sr. No.	Subject	Available
1.	131U01G401 – Statistical Techniques I	
2.	131U01C402 -	
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		



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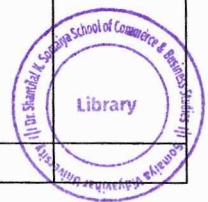


SOMAIYA
VIDYAVIHAR UNIVERSITY

B.com (H) (C)
Sem IV
AT RT

Semester (April 2026)		
Examination: End Semester Examination April 2026 (UG Programmes)		
Programme code: 01 Programme: SYBCOM HONS	Class: SY	Semester: IV
Name of the Constituent College: SKSCBS	Name of the Department : Commerce	
Course Code: 131U01G401	Name of the Course: Statistical Techniques - 1	
Duration : 2 Hrs.	Maximum Marks : 60	
Instructions: 1) All Questions are compulsory. 2) Figures to the right indicate full marks. 3) Use of SIMPLE Calculator is allowed. 4) Graph paper will be provided on request.		

Question No.		Max. Marks	Co Attainment
Q.1 a)	Find Inverse of $A = \begin{bmatrix} 1 & -2 & 4 \\ 3 & 5 & -2 \\ 2 & -1 & 3 \end{bmatrix}$ using Adjoint method.	10	CO1
Q.1 b)	Food I contain 3 units of vitamin A and 1 unit of vitamin B. the same figures for food II are 2 units and 3 units respectively. If the daily requirement of vitamin A and B are 12 and 11 units respectively, find the amounts of food I and II that will satisfy the daily requirements exactly.	05	CO1
OR			
Q.1 a)	Solve the following system of equations. $2x - y + z = 1$ $x + 2y + 3z = 8$ $3x + y - 4z = 1$	10	CO1
Q.1 b)	Evaluate determinant of following matrix, $\begin{bmatrix} 1 & 4 & 8 \\ 2 & 3 & 6 \\ 6 & 4 & 2 \end{bmatrix}$	05	CO1
Q.2 a)	Solve following LPP using simplex method, Maximize $Z = 8x_1 + 20x_2$ Subject to, $2x_1 + x_2 \leq 80$ $3x_1 + 4x_2 \leq 96$ $x_1, x_2 \geq 0$	08	CO2
Q.2 b)	Solve following LPP Graphically, Minimize $Z = 20x_1 + 10x_2$ Subject to, $x_1 + 2x_2 \leq 40$ $3x_1 + x_2 \geq 30$ $4x_1 + 3x_2 \geq 60$ $x_1, x_2 \geq 0$	07	CO2
OR			



Q.2	Solve following LPP using Simplex method. Maximize $Z = 30x_1 + 40x_2 + 20x_3$ Subject to, $10x_1 + 12x_2 + 7x_3 \leq 10000$ $7x_1 + 10x_2 + 8x_3 \leq 8000$ $x_1 + x_2 + x_3 \leq 1000$ $x_1, x_2, x_3 \geq 0$	15	CO2																		
Q.3	The following table gives the probability distribution of the return of two shares X and Y. find the expected value and the total risk for both shares and comment. <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Probability</td> <td>0.1</td> <td>0.2</td> <td>0.35</td> <td>0.25</td> <td>0.1</td> </tr> <tr> <td>Return on share X (%)</td> <td>5</td> <td>6</td> <td>7</td> <td>8</td> <td>9</td> </tr> <tr> <td>Return on share Y (%)</td> <td>3</td> <td>5</td> <td>7</td> <td>9</td> <td>11</td> </tr> </table>	Probability	0.1	0.2	0.35	0.25	0.1	Return on share X (%)	5	6	7	8	9	Return on share Y (%)	3	5	7	9	11	15	CO3
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Return on share X (%)	5	6	7	8	9																
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OR																					
Q.3 a)	Two types of batteries are tested for their length of life and the following data is obtained. <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td></td> <td>Size of sample</td> <td>Mean</td> <td>Std. dev.</td> </tr> <tr> <td>Type A</td> <td>9</td> <td>620</td> <td>11</td> </tr> <tr> <td>Type B</td> <td>8</td> <td>640</td> <td>12</td> </tr> </table> <p>Is there a significant difference between the two means? Test at 5% level of significance.</p>		Size of sample	Mean	Std. dev.	Type A	9	620	11	Type B	8	640	12	10	CO4						
	Size of sample	Mean	Std. dev.																		
Type A	9	620	11																		
Type B	8	640	12																		
Q.3 b)	A manager claimed that 65% of people prefer their brand of toothpaste. A random sample survey of 250 people showed that 70% persons preferred their brand. Can the managers claim be accepted at 5% level of significance?	05	CO3																		
Q.4	Answer following questions	15	CO1,2,3,4																		
1)	Define Slack, Surplus and Artificial Variables.																				
2)	The total risk for share S and market M is 30 and 40 respectively, while the covariance between the returns of S and M is 30. Separate the total risk of the share S into systematic and unsystematic risk.																				
3)	Calculate expected return, <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Probability</td> <td>0.35</td> <td>0.35</td> <td>0.25</td> <td>0.05</td> </tr> <tr> <td>Return (%)</td> <td>34</td> <td>46</td> <td>35</td> <td>23</td> </tr> </table>	Probability	0.35	0.35	0.25	0.05	Return (%)	34	46	35	23										
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4)	Illustrate Diagonal matrix with example.																				
5)	Mr. X bought some shares of a company at Rs. 120 each. After receiving a dividend of Rs.20 on each share, he sold them all at Rs. 150. Find his return for the holding period.																				



ATKT MARCH / APRIL 2026		
Examination: End Semester Examination March/April 2026 (UG Programmes)		
Programme code: 01 Programme: BCOM [H]	Class: SY	Semester: IV
Name of the Constituent College: Dr. Shantilal K. Somaiya School of Commerce & Business Studies.	Name of the Department COMMERCE	
Course Code: 131U01C402	Name of the Course:	
Duration : 2 Hrs.	Maximum Marks : 60	
Instructions: 1) All questions are compulsory 2) Figures to the right indicates full marks 3) Use of simple calculator is allowed.		

Q. No.		Max. Marks	CO																																
Q.1.	<p style="text-align: center;">Balance sheet of DEEP Ltd. as at 31st March, 2023: -</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <thead> <tr> <th style="width: 35%;">Liabilities</th> <th style="width: 15%;">Rs.</th> <th style="width: 35%;">Assets</th> <th style="width: 15%;">Rs.</th> </tr> </thead> <tbody> <tr> <td>10% Redeemable Preference Shares of Rs.10 each fully paid</td> <td style="text-align: right;">13,50,00 0</td> <td>Fixed Assets (WDV)</td> <td style="text-align: right;">25,00,000</td> </tr> <tr> <td>Equity Shares of Rs.10 each fully Paid up</td> <td style="text-align: right;">13,50,00 0</td> <td>Investments</td> <td style="text-align: right;">4,05,000</td> </tr> <tr> <td>Securities Premium</td> <td style="text-align: right;">40,500</td> <td>Current Assets</td> <td style="text-align: right;">10,70,000</td> </tr> <tr> <td>General Reserve</td> <td style="text-align: right;">6,40,000</td> <td>Bank Balance</td> <td style="text-align: right;">3,00,000</td> </tr> <tr> <td>Profit and Loss Account</td> <td style="text-align: right;">7,10,000</td> <td></td> <td></td> </tr> <tr> <td>Creditors</td> <td style="text-align: right;">1,84,500</td> <td></td> <td></td> </tr> <tr> <td></td> <td style="text-align: right;">42,75,000 0</td> <td></td> <td style="text-align: right;">42,75,000</td> </tr> </tbody> </table> <p>The company exercises the option to redeem 10% Redeemable Preference shares at 10% premium and for this purpose the company issued 67,500 right shares of Rs.10 each at a premium of Rs.10 per share. The right shares were fully paid. The company also sold out the investment at Rs.5,13,000. All payments were made to the Redeemable Preference shareholders except those holding 675 shares who could not be traced.</p> <p>The Directors then issued bonus shares to the then shareholders after issue of new shares, at the rate of 2 shares for every 3 shares held at 5% premium. The company decided to reduce the reserves to a minimum.</p> <p>Pass necessary journal entries in the books of DEEP Ltd. for the above transactions and also prepare the Balance Sheet of the company after redemption.</p> <p style="text-align: center;">OR</p>	Liabilities	Rs.	Assets	Rs.	10% Redeemable Preference Shares of Rs.10 each fully paid	13,50,00 0	Fixed Assets (WDV)	25,00,000	Equity Shares of Rs.10 each fully Paid up	13,50,00 0	Investments	4,05,000	Securities Premium	40,500	Current Assets	10,70,000	General Reserve	6,40,000	Bank Balance	3,00,000	Profit and Loss Account	7,10,000			Creditors	1,84,500				42,75,000 0		42,75,000	15	01
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Q.1.	<p>A company issued 50,000-8% Debentures of Rs. 100 each at par on 01-01-2020 redeemable on 31-12-2023 at par. The company decided to invest money outside business to provide funds for redemption. The outside investments were made @ 8% p.a. on the last day of each year. On 31st December, 2023, the company sold all investments for Rs. 21,00,000 and redeemed the 8% Debentures. The Sinking Fund value of Re 1 @ 8% interest for 4 years is 0.30504.</p> <p>Prepare for all the four years: 8% Debentures Accounts, Sinking Fund Account, Sinking Fund Investment A/c.</p>	15	01																																

Q.2.

A head office in Nagpur has a Branch at Mumbai to which goods are invoiced at Cost plus 20%. All expenses of branch are to be paid by Head Office except petty cash expenses & branch remits all the cash received to the H.O.
From the following particulars show how the branch a/c will appear in H.O.
By Debtors method.

PARTICULARS	₹
Balances as on 1-4-2022:-	
Stock	4,00,000
Branch Debtors	3,88,000
Computer	7,20,000
Petty Cash	20,000
Furniture	80,000
Goods sent to the Branch	22,40,000
Returns from Debtors	81,600
Total sales	33,60,000
Cash sales	7,20,000
Cash received from Debtors	22,00,000
Goods returned to H.O.	96,000
Petty expenses paid by Branch manager	27,200
Cheques sent to the Branch for:-	
Salaries	3,36,000
Rent	1,44,000
Petty Cash	28,000
Showroom expenses	81,600
stationery	20,800
Allowances to Debtors	14,400
Discount allowed to debtors	19,200
Bad debts	15,200
Balances as on 31-3-2023:-	
Stock	4,80,000
Branch debtors	?
Computer	?
Petty Cash	?
Stationery	3,200
Furniture	?

OR

Q.2.

H.O. in Mumbai has a branch to which goods are sent at Invoice price which is fixed at a profit of 15% on sale.

PAERTICULARS	₹	PARTICULARS	₹
Opening stock [IP]	36,000	Salaries	12,000
Opening petty cash	3,000	Rent	9,000
Opening Debtors	48,000	Closing Stock [IP]	48,000
Good sent to branch [IP]	1,44,000	Cash sent to branch	13,200
Goods return by branch [IP]	4,800	Discount Allowed	600
Remittance from branch	2,01,000	Bad Debts	900
Return from Debtors	12,000	Commission paid	4,500
Collection from Debtors	2,04,000	Closing petty cash	2,700
Cash sales	9,000	Closing Debtors	54,000

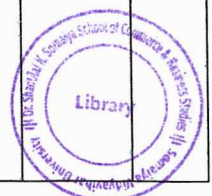
Prepare necessary ledger accounts.

15

02

15

02



Q.3.	A. Explain objectives & scope of IND AS – 8. [8 M] B. Briefly explain purpose of financial statements as per Ind As - 1. [7 M]	15	03
OR			
Q.3.	On 1 st Jan. 18 Machinery is offered for sale at ₹ 15,00,000 with the payment terms being four equal installments of ₹ 3,00,000 each, over four-year period. Down payment is done on 1 st Jan 2018 @ ₹ 3,00,000 & Remaining on 31 st Dec. every year. Interest rate is 10 % p.a. Show how the property will be recorded in accordance with IND As 16 & pass necessary Journal Entries.	15	03
Q.4	Answer the followings [5 Marks each] a. A machinery which cost ₹ 45,000 was estimated to have a useful life of 10 years & residual value ₹ 15,000. After 4 years, useful life was revised to 7 remaining years. Calculate the depreciation charge. b. The following three alternatives have been given to redeem 20,000 15% Debentures of ₹100each at par i. Payment in cash. ii. Equity shares to be issued at ₹12 (face value ₹10) iii. 12% New Debenture of ₹100 each at ₹ 96. Holders of 8,000 Debentures accepted Preference shares; 8,000 holders accepted 15% new Debentures and the remaining holders in cash Show working of conversion. c. Briefly explain sinking fund method.	15	03 01 02

