



EXAMINATION MATERIAL ZUEB - 2022

BUSINESS MATHEMATICS XI (COMMERCE)

SECTION "C"

EXTENDED RESPONSE QUESTIONS (ERQ'S)

<p>CHAPTER 1 Ratio, Proportion and Percentage:</p>	<p>ERQ'S</p>	<p><u>Question no.01:</u> The selling price of an item is Rs. 690 on which 15% profit is earned by the trader. What is the cost price of the item?</p> <p><u>Question no.02:</u> Find the selling price and the profit if the cost price of an item is Rs. 45,000 and profit is 20%.</p> <p><u>Question no.03:</u> The selling price of an item is Rs. 690 on which 15% profit is earned by the trader. what is the cost price of the item?</p> <p><u>Question no.04:</u> A shopkeeper sells an article for Rs. 2550 at a loss of 15% what should be the selling price of the article to get a profit of 12%.</p>
<p>CHAPTER 2 Interest & Annuities:</p>		<p><u>Question no.01:</u> Abdullah saves Rs. 1200 from his pocket money and deposits it in a bank at the end of each quarter for 5 years. If the interest rate is 10% compounded quarterly, what amount would he get at the end of 5 years.</p> <p><u>Question no.02:</u> Find the total amount of the present value of an annuity of Rs. 600 after 10 years at 8% compounded semiannually</p> <p><u>Question no.03:</u> Find the sum of annuity and the present value of annuity, if an amount of Rs. 5000 is invested at the end of each quarter for 5 years at 5.5% per annum compounded quarterly.</p> <p><u>Question no.04:</u> Mr. Asif has a 10-year-old daughter. He estimates that when his daughter enters college in 6 years, he will be needing Rs. 26,000 for her admission. He decides to deposit a certain amount of money into a bank account paying 8% compounded quarterly at the end of every 3 month. What must his quarterly payment be in order that he will have Rs. 26,000 in 6 years.</p>

<p>CHAPTER 3</p> <p>Functions and Their Graphs:</p>	<p><u>Question no.01:</u></p> <p>Find the equation of the straight line which passes through the points (10, 7) and (12, 9), also find the slope and y-intercept of the straight line.</p> <p><u>Question no.02:</u></p> <p>For the quadratic equation:</p> $y = 2x(4x - 1) - 15.$ <p>Determine:</p> <ol style="list-style-type: none"> The vertex of the parabola. The roots of the equation. <p><u>Question no.03:</u></p> <p>Find the equation of the straight line in general form passing through point (2, -6) and having slope $-\frac{5}{7}$. Also find x-intercept and y-intercept of the straight line.</p>
<p>CHAPTER 4</p> <p>Linear & Quadratic Equations:</p>	<p><u>Question no.01:</u></p> <p>Solve the following for 'x'.</p> $\frac{3x+2}{2} + \frac{4x+5}{4} - \frac{3x-8}{8} = 16.$ <p><u>Question no.02:</u></p> <p>Solve the following equations:</p> $x = \frac{\sqrt{9x-5}}{2}$ <p><u>Question no.03:</u></p> <p>Solve the following equations:</p> $2x + 3y = 8$ $5x - 2y = 1$
<p>CHAPTER 5</p> <p>Binary Numbers:</p>	<p><u>Question no.01:</u></p> <p>Perform the following binary operations:</p> <ol style="list-style-type: none"> $11011 + 10111 + 101.$ $1011 + 1001 - 111$ $1100011 - 100110.$ 1001×101 <p><u>Question no.02:</u></p> <p>Perform the binary operation and write your answer in decimal form</p> $11001 \times 1001 + 1000 - 1100.$

Question no.03:

Perform the binary operations:

(a) $(100110)_2 \times (101)_2$

(b) $(100011)_2 + (11101)_2 - (1111)_2$.

**CHAPTER 6
Matrices &
Determinants:****Question no.01:**

Find the inverse of the matrix:

$$A = \begin{bmatrix} 8 & 10 \\ 9 & 12 \end{bmatrix} \text{ and show that } AA^{-1} = I$$

Question no.02:

Solve the following equations by the help of matrices:

$$3x + 5y = 24$$

$$4x - 7y = -50$$

Question no.03:

Solving by Cramer's Rule:

$$3x + 2y = 4$$

$$4x - 3y = 11$$

Question no.04:

Expand the determinant $\begin{vmatrix} 5 & 10 & 15 \\ 6 & 5 & 4 \\ 1 & 2 & 3 \end{vmatrix}$

Question no.05:

If $A = \begin{bmatrix} 3 & -1 \\ 2 & -5 \end{bmatrix}$, $B = \begin{bmatrix} 3 & 0 & 1 \\ 9 & 1 & 5 \end{bmatrix}$ and $C = \begin{bmatrix} 4 & 3 \\ 6 & 5 \end{bmatrix}$

Find: (a) AB (b) $2A + C$ (c) $A^t - C^t$.