ZIAUDDIN UNIVERSITY
EXAMINATION BOARD

EXAMINATION MATERIAL ZUEB - 2022

BUSINESS MATHEMATICS XI (COMMERCE)

SECTION "B" CONSTRUCTED RESPONSE QUESTIONS (CRQ'S)

CHAPTER 1 Ratio, Proportion and Percentage:	**CRQ'S**	**Question no. 01:** If a and b are in the ratio of 7: 9 and b and c are in the ratio 6: 7 what is the ratio of a to c? **Question no.02.** 5 photocopiers can produce 90000 copies in 6 hours a day. How many photocopiers will be required to produce 168000 copies working 8 hours a day. **Question no.03:** 25 labourers can construct 15 rooms in 18 days. in how many days can 10 labourers complete 10 rooms of the same size. **Question no.04:** A profit of Rs. 1600 is to be divided among three persons A, B, and C in the ratio $\frac{1}{10}$,$\frac{2}{5}$ and $\frac{1}{2}$. How much should each receive? **Question no.05:** A, B, and C invested jointly a sum of Rs. 40,000, Rs, 50,000 and Rs. 100,000 respectively in a computer business. If the total profit was Rs. 35,000 at the end of the year, find the share of the profit of each investor. **Question no.06:** If p: q = 5: 2, find the value of $\frac{p-2q}{p+q}$.
CHAPTER 2 Interest & Annuities:		**Question no.01.** Find the simple interest to the nearest paisa on Rs. 3,800 at the rate of 12% for 6 months. **Question no.02.** Zahid borrowed Rs. 6000 from Iqbal for 3 ½ years at a simple interest rate of 8% per annum. How much Zahid has to pay at the end of the period?

		Question no.03. Find the compound amount and the compound interest at the end of 3 years on Rs. 6,000 borrowed at 5% compounded annually. **Question no.04.** The population of a town increases by 2 ½ % each year. Three years ago, the population was exactly 44800. What is it now? **Question no.05.** Find the compound on Rs. 25,000 in 3 years at 4% compounded quarterly. **Question no.06.** Find the compound interest on investment of Rs. 2,000 at 10% compounded monthly for 2 years. **Question no.07.** If amount is invested at 6% per annum, compounded semiannually, find the effective rate of interest. **Question no.08.** Find the effective rate of interest corresponding to a quoted rate of 8% per year compounded. a) Quarterly. (b) Monthly. **Question no.09.** Find the amount of Rs. 1500 invested at 6% compounded semi-annually and due at the 8.5 years.
CHAPTER 3 **Functions and Their Graphs:**		**Question no.01.** Find the distance between the two points (5, 2) and (-3, 8). **Question no.02.** Find the equation of a straight line passing through the points. (0, 4) and (-3, 0) **Question no.03.** Express the equation of straight line $\frac{X}{4} + \frac{Y}{7} = 2$ in general form of the Straight line. Also find X and Y intercepts.

		Question no.04. Find the roots of equation $14 - 9x + x^2 = 0$. **Question no.05.** If $y = 1 + x^2 - 4x$, find the vertex of parabola. **Question no.06.** Find the Slope and y – intercept of the line: $2x + 3y = 6$.
CHAPTER 4 Linear & Quadratic Equations:	**CRQ'S**	**Question no.01.** Solve the following equation: $\frac{x+5}{7} + \frac{x-3}{4} = \frac{5}{14}$ **Question no.02.** Solve the following equation for x: $3 - [2(1 - x) - x] = 4.$ **Question no.03.** Solve the following equation: $\frac{x+5}{7} + \frac{x-3}{4} = \frac{5}{14}$ **Question no.04.** Solve the following equation for x: $\frac{4x-1}{10} - \frac{5x-2}{4} = -3$
CHAPTER 5 Binary Numbers:		**Question no.01.** a) Convert the decimal number 114 into its equivalent binary number and the binary number 10100 to the decimal number. b) Convert the decimal number 187 to the binary number and the binary number 10100 to the Decimal number. **Question no.02:** a) Convert the decimal number 1224 to binary number: b) Convert the decimal fraction 0.96875 to binary fraction.

		Question no.03: a) Convert the binary number 1001.1101 to a decimal number. b) Convert the decimal number 59.375 to binary number. **Question no.04:** Perform the following binary number operations; a) 1111 × 110 (b) 11110 ÷ 101. **Question no.05:** Perform the following binary operation is: a) Add 101111, 110101, and 101101. b) Subtract binary number 1100011 from 100110. **Question no.06:** Perform the following binary number: a) 11001 × 1001 - 10011. b) 1111110 ÷ 111.
CHAPTER 6 Matrices & Determinants:		**Question no.01.** For the following matrices: $A = \begin{bmatrix} 2 & 4 \\ 1 & 3 \\ 5 & 0 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 3 \\ 0 & 4 \\ 5 & 7 \end{bmatrix}$ **Find, (i) $4A^t$ (ii) $2A + 3B$** **Question no.02.** If, $B = \begin{bmatrix} 1 & 2 \\ 2 & 3 \\ 4 & 1 \end{bmatrix}$ **Find: $B \times B^t$** **Question no.03.** Find the inverse of the matrix $A = \begin{bmatrix} 2 & -8 \\ 3 & 6 \end{bmatrix}$

Question no.04.

If $A=\begin{bmatrix}1 & -1 & 2\\ 2 & 1 & 0\end{bmatrix}$ and $B=\begin{bmatrix}1 & 2\\ 2 & 0\\ -1 & 1\end{bmatrix}$

Find: $B^t \times A^t$

Question no.05.

$A = \begin{bmatrix}2 & 3\\ 4 & 5\\ 4 & 4\end{bmatrix}$, $B = \begin{bmatrix}1 & 2 & 3\\ 4 & 5 & 6\end{bmatrix}$

Find, (i) $A - 3B^t$ (ii) $B \times A$

Question no.06.

$A = \begin{bmatrix}2 & 3 & 4\\ 1 & 2 & 5\end{bmatrix}$ $B = \begin{bmatrix}5 & 6\\ 7 & 8\\ 2 & 3\end{bmatrix}$

Find, (i) $A \times B$ (ii) $B \times A$