

RAN-2408000601060024
B.Com. Data Analytics (Sem. -I) Examination November - 2025
SEC - Mathematics for Data Analytics
[Total Marks: 25
સૂચના : / Instructions

- (1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the above details on your answer book
- (2) Figures to the right side indicate full marks of the questions.
- (3) Graph papers and statistical tables would be supplied on request.
- (4) Non-scientific calculator can be used.

Seat No.:

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Student's Signature

Q. 1. Answer the following questions. (Any Five)
10

1. Solve the equation: $\frac{4x+6}{9} = \frac{3x+5}{7}$.
2. Give the negation of $x \in A$ and $x \in B$.
3. What is quadratic equation ?
4. Define: Simple Statement.
5. Define: Universal Set.
6. If $A = \{1, 4\}$ and $B = \{2, 3\}$ then find $A \times B$
7. Evaluate: ${}^{10}P_4 + 60$.

Q. 2 (A) If $A = \{1, 2\}$, $B = \{2, 3\}$ and $C = \{3, 5\}$ then prove that:
5

$$A \times (B \cup C) = (A \times B) \cup (A \times C)$$

- (B) Out of ten consonants and four vowels, how many words can be formed each containing six consonants and three vowels?

5

- (C) If ${}^nP_4 = 12 \times {}^nP_2$ then find n.

5
OR
Q. 2 (A) Prove the following De-Morgan's Laws with using truth table:
8

(i) $\sim (P \vee q) = (\sim p) \wedge (\sim q)$.

(ii) $\sim (p \wedge q) = (\sim p) \vee (\sim q)$.

- (B) Solve the following equations by using Substitution method:

7

$$2x + 5y = 15$$

$$3x + 8y = -1.$$