Assignment 1:   Deadline: 10th of Sept,2025

1) Which of the following are sets? Justify your answer.

(i) The collection of all Nepali months of a year whose names begin with the letter 'A'.

(ii) The collection of ten most talented writers of Nepal.

(iii) A team of eleven best cricket batsmen of the world.

(iv) The collection of all boys in your class.

(v) The collection of all natural numbers less than 100.

(vi) The collection of all novels written by the writer Laxmi Prasad Devkota.

(vii) The collection of all even integers.

(viii) The collection of all questions in this chapter.

(ix) The collection of the most dangerous animals in the world.

2. Write the following sets in roster form:

(i) A = {x: x is an integer and $-3 < x < 7$}.

(ii) B = {x: x is a natural number less than 6}.

(iii) C = {x: x is a two-digit natural number such that the sum of its digits is 8}

(iv) D = {x: x is a prime number which is divisor of 60}.

(v) E = The set of all letters in the word TRIGONOMETRY.

(vi) F = The set of all letters in the word BETTER.

3. Write the following sets in the set-builder form:

(i) (3, 6, 9, 12)

(ii) {2, 4, 8, 16, 32}

(iii) {5, 25, 125, 625}

(iv) {2, 4, 6 …}

(v) {1, 4, 9 … 100}

4. List all the elements of the following sets:

(i) A = {x: x is an odd natural number}

(ii) B = {x: x is an integer, -1/2 < x < 9/2}

(iii) C = {x: x is an integer, $x^2 \le 4$}

(iv) D = {x: x is a letter in the word "LOYAL"}

(v) E = {x: x is a month of a year not having 31 days}

(vi) F = {x: x is a consonant in the English alphabet which proceeds k}.

5. Match each of the set on the left in the roster form with the same set on the right described in set-builder form:

(i) {1, 2, 3, 6}   (a) {x: x is a prime number and a divisor of 6}

(ii) {2, 3}   (b) {x: x is an odd natural number less than 10}

(iii) {M, A, T, H, E, I, C, S}   (c) {x: x is a natural number and divisor of 6}

(iv) {1, 3, 5, 7, 9}   (d) {x: x is a letter of the word MATHEMATICS}