INDIAN SCHOOL AL WADI AL KABIR

DEPARTMENT OF MATHEMATICS 2021 – 2022

Work Sheet –- Class XI

SETS - 1

1	**Write the following sets in the roster form.** (a) A = {x : x ∈ W, x ≤ 5} (b) B = {x : x ∈ N, -3 < x < 3) (c) C = {x : x is divisible by 12} (d) D = {x : x = 3p, p ∈ W, p ≤ 3} (e) E = {x : x = a^2, a ∈ N, 3 < a < 7} (f) F = {x : x = n/(n + 1), n ∈ N and n ≤ 4} (g) G = {x : x ∈ N, 3x - 2 < 5} (h) J = {x : x ∈ N, x^2 < 16} (i) K = {x : x is a prime number which is a divisor of 42} (j) H = {x : x is a 2-digit natural number such that the sum of its digits is 5}
2	**Write the following sets in the set builder form.** (a) A = {2, 4, 6, 8} (b) B = {3, 9, 27, 81} (c) C = {1, 4, 9, 16, 25} (d) D = {1, 3, 5, ...} (e) E = {4, 6, 8, 9, 10, 12, 14, 15, 16, 18, 20, ..., 52} (f) F = {-10, ..., -3, -2, -1, 0, 1, 2, ..., 5} (g) G = {O} (h) P = { } (i) H = {-5, 5} (j) Q = {V, I, B, G, Y, 0, R}
3	**Are the following pairs of sets equal?** (a) A = {2} B = {x : x ∈ N, x is an even prime number}. (b) P = {1, 4, 9} Q = {x : x = n^2, n ∈ N, n ≤ 3) (c) X = {x : x ∈ W, x < 5} Y = {x : x ∈ N, x ≤ 5} (d) M = {a, b, c, d} N = {p, q, r, s} (e) D = {x : x is a multiple of 30} E = {x : x is a factor of 10}

4	**Find the cardinal number of the following sets.** (a) $A = \{x : x \in N, 2 < x < 7\}$ (b) $B = \{x : n \in N, x = n^2, n < 3\}$ (c) The set of months in a year (d) $C = \{x : x \in Z+, x < 100\}$ (e) $D = \{x : x = n^3, n \in W, n < 5\}$ (f) The set of letters in the word MALAYALAM
5	**Write the following in interval form.** 1) $\{x: x \in R, -4 < x \leq 6\}$ 2) $\{x: x \in R, 0 \leq x < 7\}$ 3) $\{x: x \in R, 3 \leq x \leq 4\}$
6	**Write all subset of the following** 1) $\{1, 2\}$ 2) $\{a, b, c\}$ 3) Φ
7	**Let A = {1, 2, {3, 4}, s, d, θ}, Which of the following statements are true / false and why?** (1) $3 \in A$ (2) $\{1, \{3, 4\}\} \in A$ (3) $\{1, 2, 3\} \subset A$ (4) $\Phi \in A$ (5) $1 \subset A$ (1 score each)
8	**Show by Venn diagrams the relationship between the following** Let M = {Natural numbers between 10 and 40; each divisible by 3} N = {Natural numbers upto 40; each divisible by 4}. (i) Write each in roster form. (ii) Draw a Venn-diagram showing the relationship between sets M and set N.