

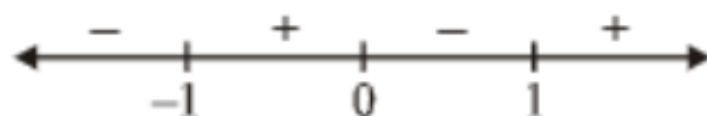
5. The domain of the definition of the function

$$f(x) = \frac{1}{4-x^2} + \log_{10}(x^3 - x) \text{ is: } \quad [\text{April 09, 2019 (II)}]$$

- (a) $(-1, 0) \cup (1, 2) \cup (3, \infty)$
(b) $(-2, -1) \cup (-1, 0) \cup (2, \infty)$
(c) $(-1, 0) \cup (1, 2) \cup (2, \infty)$
(d) $(1, 2) \cup (2, \infty)$
5. (c) To determine domain, denominator $\neq 0$ and $x^3 - x > 0$

$$\text{i.e., } 4 - x^2 \neq 0 \quad x \neq \pm 2 \quad \dots(1)$$

$$\text{and } x(x-1)(x+1) > 0$$



$$x \in (-1, 0) \cup (1, \infty) \quad \dots(2)$$

Hence domain is intersection of (1) & (2).

$$\text{i.e., } x \in (-1, 0) \cup (1, 2) \cup (2, \infty)$$