

Medium Deputy Executive Engineer (Electricity) 2026 Gujarat Public Service Commission / Assistant Engineer (Electrical) 2026

- A

1, 2, 3, 4
- B

2, 3, 4
- C

1, 2, 4

Correct
- D

Correct Answer: C

Full Detailed Explanation

Given: $X(s) = \frac{1}{s^2 + 2s + 2}$

Since the system is LTI and BIBO stable, the ROC must contain the imaginary axis ($j\omega$).

The poles of $X(s)$ are at $s = -1 \pm j$.
The ROC is the region to the left of the rightmost pole, i.e., $\text{Re}(s) < -1$.
The ROC is the region to the right of the leftmost pole, i.e., $\text{Re}(s) > -1$.