We have,

$$\lim_{x \to 1}\left(\frac{x^7 - 2x^5 + 1}{x^3 - 3x^2 + 2}\right) = (1 - 2 + 1) / (1 - 3 + 2) = 0 / 0 \quad \text{--- (1)}$$

From (1), we can use L-Hospital Rule,

$$\lim_{x \to 1}\left(\frac{7x^6 - 10x^4}{3x^2 - 6x}\right) = (7 - 10) / (3 - 6) = (-3)/(-3) = 3/3 = 1$$

GATE NOTES,

L-Hospital Rule

Related Posts:

2. Normal Forms
3. Static Single Assignment
5. Birthday Attack