GATE-2023 EC Q.25

EE23BTECH11214 - Harsha Vardhan Kumar

Question: In the context of signals and systems, determine the phase cross-over frequency of the open-loop transfer function

$$G(s) = \frac{k \cdot s \cdot (1 + sT_1) \cdot (1 + sT_2)}{s}$$

with positive constants k, T_1, T_2 are positive constants.The phase crossover frequency,in rad/s,is [EC,GATE-2023]

(a) $\frac{1}{\sqrt{T_1 T_2}}$

(b) $\frac{1}{T_1 T_2}$

(c) $\frac{1}{T_1 \sqrt{T_2}}$

(d) $\frac{1}{\sqrt{T_2 T_1}}$