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Question:

In a slider-crank mechanism, the crank is 480 mm long and rotates at 20 rad/sec in the counter-clockwise direction. The length of the connecting rod is 1600 mm. when the crank turns 60 from the inner-dead centre. Determine the velocity of the slider by relative velocity method.

Answer:

43(a) Slider Crank mechanism Crank = 480 mm long = 0A = 0.480 m Connecting red = 1600 mm long = Ap 60 AO = 20 rad/s) scale 1:20 [1 Mark] T.D.C. 0.0 .. VAO = WAO x AO = 20 × 0.480 = 9.6 m/s VPO 2 Marks PA velocity diagram scale - 1 m/s = 1 cm Velocity of slider = Npo = po = 9.5 m/s [1 mark]