Assignment 5

The due date for submitting this assignment has passed. Due on 2018-03-14, 23:59 IST.

Submitted assignment

1) For the given configuration of the mechanism, points C, A and D are collinear. 1 point
If CA = 2 cm, CD = 6 cm and $\omega_2 = 3$ rad/s (counter clockwise), then find $\omega_4$ in rad/s.

- 1.5 rad/s (Counter clockwise)
- 1.5 rad/s (Clockwise)
- 1 rad/s (Counter clockwise)
- 1 rad/s (Clockwise)

No, the answer is incorrect.
Score: 0

Accepted Answers:
1.5 rad/s (Clockwise)

2) For the mechanism at the given instant, we have $l_1 = 4$ cm, $l_2 = 3$ cm, $\angle DAC=90^\circ$, and $\angle ACB=150^\circ$, $\angle DAE=90^\circ$. Find the y-coordinate of the instantaneous centre of rotation $I_{13}$ in the coordinate system shown.
3) For the four bar mechanism, find the location of relative instantaneous centre of rotation \( I_{13} \) in the given coordinate system.

-6.93 cm
-8.58 cm
-10.25 cm
-12.4 cm

No, the answer is incorrect.
Score: 0
Accepted Answers:
-6.93 cm

4) For the mechanism with \( AB = 400 \text{ mm} \), \( BD = 200 \text{ mm} \), \( BC = 250 \text{ mm} \), the point D is exactly above point C in the given configuration. Find y-coordinate of the
instantaneous centre of rotation $I_{13}$ in the coordinate system shown.

For the mechanism shown, find the location of relative instantaneous centre of rotation $I_{24}$ in the given coordinate system in mm.

- 519.6 mm
- 480.2 mm
- 623.7 mm
- Can not be determined

No, the answer is incorrect.
Score: 0
Accepted Answers:
519.6 mm

5) For the mechanism shown, find the location of relative instantaneous centre of rotation $I_{24}$ in the given coordinate system in mm.

- (0,45)
- (178.7,120)
- (178.7,0)
- At infinity in negative y direction

No, the answer is incorrect.
Score: 0
Accepted Answers:
(0,45)

6) For the given mechanism, find the location of relative instantaneous centre of rotation $I_{23}$ in the given coordinate system in cm.
The given mechanism has \( r = 5 \) cm and \( DA = AE = 3 \) cm, where D and E are rollers. In the configuration shown, the link DE is horizontal (parallel to the ground). If the velocity of the slider B is 5 cm/s to the right, find the angular velocity of the link DE in rad/s.

- 1.8 rad/s (Counter clockwise)
- 1 rad/s (Counter clockwise)
- 2.5 rad/s (Counter clockwise)
- 1.25 rad/s (Counter clockwise)

No, the answer is incorrect.
Score: 0
Accepted Answers:
1.25 rad/s (Counter clockwise)
8) A 4R Grashof chain has a crank of 3 cm and a follower of 5 cm. The crank has a constant angular velocity of \( \omega_2 = 4 \text{ rad/s} \). The magnitude of the angular velocity of the follower when it is vertical and also parallel with the crank is \( \omega_4 = \ldots \text{ rad/s} \).

- 2 rad/s
- 3.6 rad/s
- 2.4 rad/s
- 4 rad/s

No, the answer is incorrect.
Score: 0
Accepted Answers: 2.4 rad/s

9) For the given mechanism, the input link OB rotates in counterclockwise direction with a constant angular velocity of 3 rad/s. For the given configuration of the mechanism, find velocity of point D in mm/s.

- 175 mm/s
- 50 mm/s
- 150 mm/s
- Can not be determined

No, the answer is incorrect.
Score: 0
Accepted Answers: 150 mm/s

10) For the given mechanism, find the location of relative instantaneous centre of rotation \( I_{24} \) in inch for the given coordinate system with origin at point A.
At infinity in y direction
At infinity in a direction perpendicular to link 4

No, the answer is incorrect.
Score: 0
Accepted Answers:
(0, 1.58)