

MCE4101 Introduction to Robotics Quiz2 (5%) SET9

Name.....ID.....

Date: 15 Sept 2020 (9.15-10.00)

Note:

1. OPEN BOOK.
 2. Matlab is allowed.
 3. Answer to the nearest 2 decimal place.
 4. 40 Marks equivalent to 5%.
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1. (40 Marks). The 3 links RPP robot is shown.

- a) (5 Marks) Obtain DH table and the transformation matrix equation T_3^0 . Where d_1 is link offset. Given $d_1 = 2.5$.
- b) (15 Marks) Determine with analytic method for possible solution for end point location $P_{end} = [1.13 \quad 1.95 \quad 3.75]$. Show your working steps.
- c) (10 Marks) Determine with ikine robotic function for possible solution for end point location $P_{end} = [1.13 \quad 1.95 \quad 3.75]$. Given $IG = [\pi/10 \quad 1 \quad 1]$. Show your MATLAB code and the answer.
- d) (10 Marks) Check your answer b) and c) with fkine robotic function. Show your MATLAB code and the answer.



