Daffodil International University
Department of Computer Science and Engineering
Faculty of Science and Information Technology
Midterm Examination   **Semester: FALL 2019**
Course Code: CSE444   Course Title: Introduction to Robotics
Section: ALL   Course Teacher: ALL

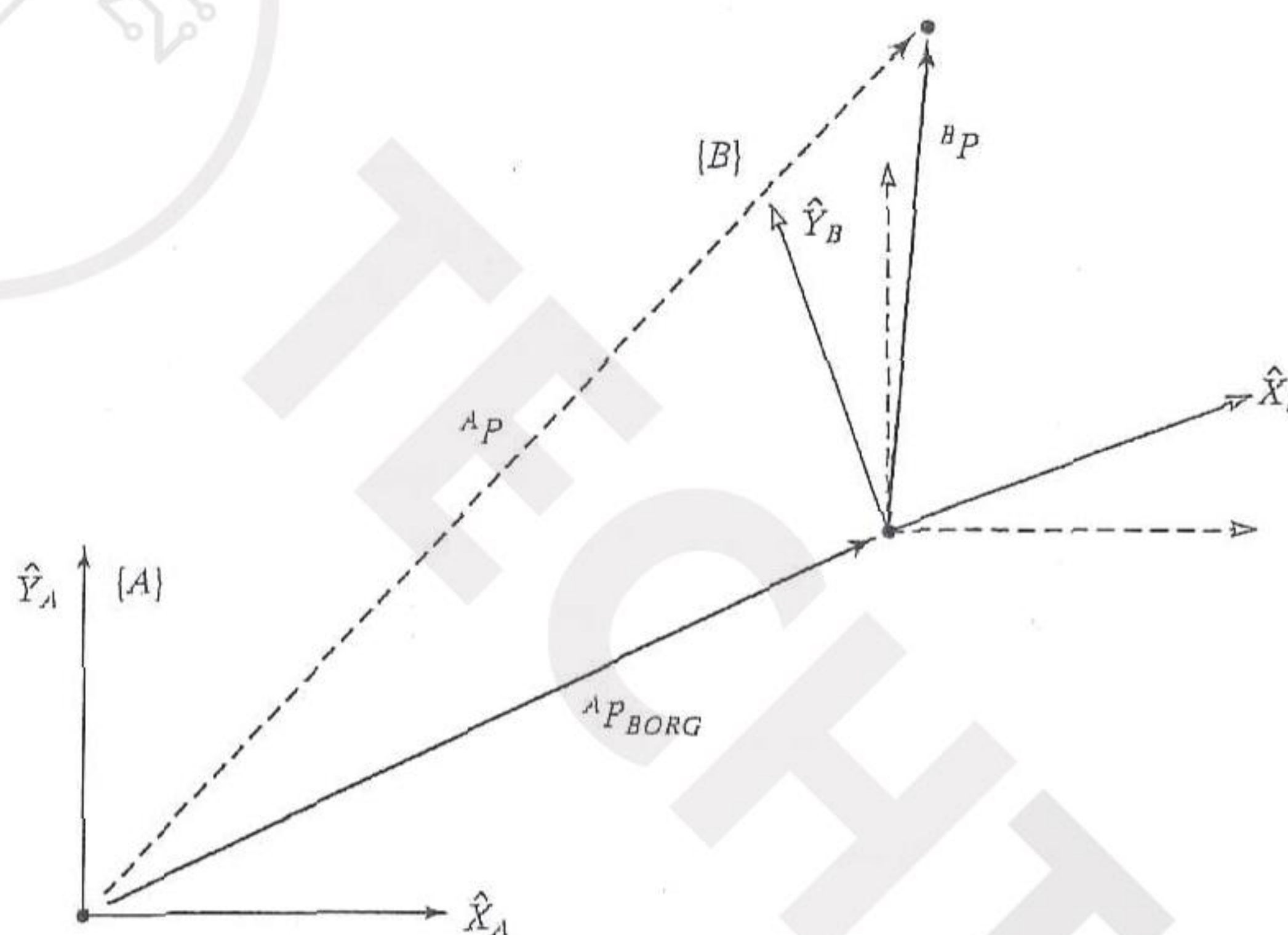Time: 1 hr 30 minutes   Full Marks: 25

Question 1:   10 + 3 + 3
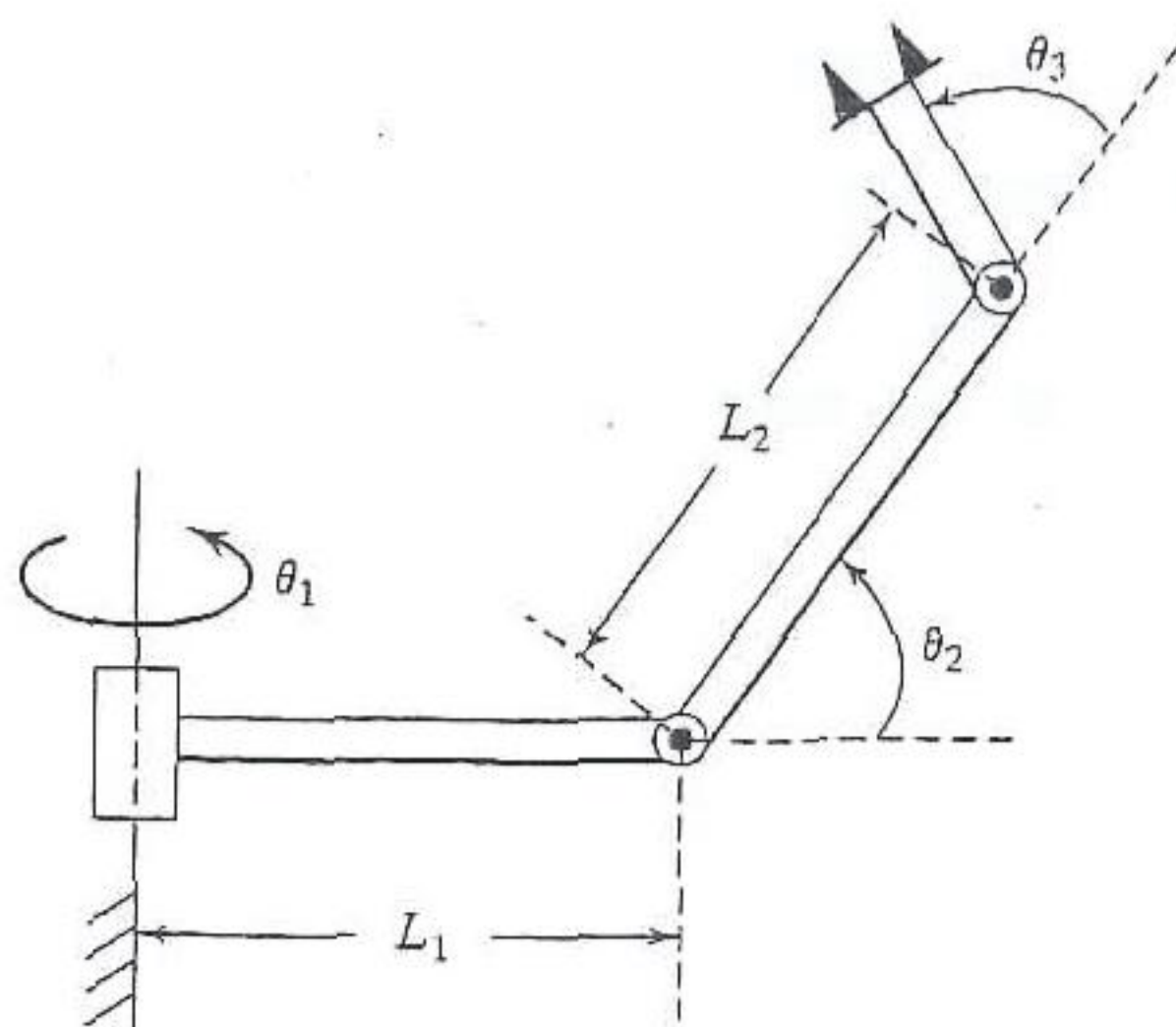Consider the following frame {B} rotated and translated:

The frame {B} is rotated relative to frame {A} about Z by 30 degrees, translated 10 units in X_A , and translated 5 units in Y_A.
(a) Find ^AP, where $^BP = [3.07.00.0]^T$.
(b) Why spatial transformation play significant role in robotics.
(c) What is a moment vector.

Question 2:   3 + 4 + 2
Consider the following illustration of a robotic arm:

(a) Describe the non-planer arm shown in the figure.

(b) Identify the link parameters and elaborate your understanding on degree of freedom.

(c) Why manipulator kinematics is important.

-------------------- Good Luck --------------------