**5B (old Spec) Hinges**

1. A uniform rod AB, of mass 6kg and length 4m, is smoothly hinged at A. A light inextensible string is attached to the rod at a point C where AC = 3m, and the point D, which is vertically above point A. If the string is keeping the rod in equilibrium in a horizontal position and the angle between the string and the rod is 40°, calculate:
2. The tension in the string
3. The magnitude and direction of the reaction at the hinge.