

Week-8:

1. What are the two generalized coordinates associated with a flexible link:
a) Joint angle and link deflection
b) Joint angle and link mass
c) Joint angle and link volume
d) None of the above
2. Name the three cases we have studied in defining the boundary conditions of a flexible link?
a) Connected, Solid, Empty
b) Pinned, Fixed, Free
c) Pinned, Free, End
d) None of the above
3. Having obtained the joint torque as the controller output, give the expression on how will you obtain the actual joint acceleration from the dynamic model-based control of a robotic system $\ddot{\theta} = B^{-1}(\tau - C(\theta, \dot{\theta})\dot{\theta} - G(\theta))$.
4. The first order error dynamic equation obtained from the CLIK algorithm is given by $\dot{e} + Ke = 0$.
5. The second-order error dynamic equation from the dynamic model-based control of a robotic system is given by $\ddot{e} + K1\dot{e} + K2e = 0$.
6. One of the common approaches used for the flexible link kinematic modeling is
a) Assumed modes method
b) Finite dealing method
c) Supporting method
d) None of the above
7. How D-H parameter based forward kinematics equation be verified?
a) By giving regular joint angular inputs
b) By checking with inverse kinematics
c) By comparing the standard and modified D-H notations
d) All of the above
8. The number of solutions a forward kinematics equation provides:
a) One
b) Two
c) Three
d) Four
9. Robot kinematics is the study of without consideration of forces associated with it.
a) Velocity
b) Motion
c) Position
d) Position and Velocity
10. What is the MATLAB command used for differentiating an expression with respect to a single variable (not an array)
a) part
b) jacobian
c) diff
d) None of the above