Quiz 3

Due No due date **Points** 4 **Questions** 4 **Time Limit** 30 Minutes
Allowed Attempts Unlimited

TAKE THE QUIZ AGAIN

Attempt History

	Attempt	Time	Score
KEPT	Attempt 5	2 minutes	4 out of 4
LATEST	Attempt 5	2 minutes	4 out of 4
	Attempt 4	2 minutes	3 out of 4
	Attempt 3	4 minutes	3 out of 4
	Attempt 2	3 minutes	3 out of 4
	Attempt 1	6 minutes	3 out of 4

Correct answers are hidden.

Score for this attempt: **4** out of 4
Submitted Jan 18 at 5:48pm
This attempt took 2 minutes.

Question 1

1 / 1 pts

Which of these is true with respect to effect of control on system dynamics? Check all that apply.

- [x] Good control u_k leads to small state x_k with small effort u_k.
- [x] System behavior is completely determined only by the initial state x_0 and control input u_k at each step.
- [ ] Good control u_k leads to large state x_k with small effort u_k.

- [ ] System behavior is completely determined by the state x_k and control input u_k at each step.

Question 2

1 / 1 pts

Which of the following is the correct representation of finite and infinite horizon problem? $l(x_k, u_k)$is the running cost function which penalizes nonzero state and input, N is the number of steps for finite horizon problem, $g(x_k)$ is the cost at state x_k, J_N is the total cost for finite horizon and $J_\infty$is the total cost for infinite horizon.

- (•) $J_N = g(x_N) + \sum_{k=0}^{N-1} l(x_k, u_k)\,,\ J_\infty = \sum_{k=0}^{\infty} l(x_k, u_k)$
- ( ) $J_N = \sum_{k=0}^{N} l(x_k, u_k)\,,\ J_\infty = \sum_{k=0}^{\infty} l(x_k, u_k)$
- ( ) $J_N = \sum_{k=0}^{N} l(x_k, u_k)\,,\ J_\infty = g(x_0) + \sum_{k=1}^{\infty} l(x_k, u_k)$
- ( ) $J_N = g(x_N) + \sum_{k=0}^{N-1} l(x_k, u_k)\,,\ J_\infty = g(x_0) + \sum_{k=1}^{\infty} l(x_k, u_k)$

Question 3

1 / 1 pts

Which of these is true with respect to Dynamic Programming? Check all that apply.

- [ ] We use forward induction to find the optimal control strategy.
- [x] Dynamic Programming is an iterative way to solve sequential optimization problem.
- [x] We use backward induction to find optimal control strategy.

Dynamic programming is a single step way to solve sequential optimization problem.

Question 4

1 / 1 pts

Control policy is a function that maps information set to action set.

- (•) True
- ( ) False

Quiz Score: **4** out of 4