

Assessment I
CS551K – Software Agents and Multi-Agent Systems
2020-2021

Instructions:

- Your solution should be one single PDF file which you should upload onto MyAberdeen by the established time/deadline. Please do not email us your solution.
 - Your PDF file should be named “CS551K-ASMNT1-Day-X-YourSurname-YourName-YourIDNo”. For instance, “CS551K-ASMNT1-Day-1-Smith-John-999999.pdf”, where Day 1-5 should be the day of the class test in question, and 999999 is your student ID. Please try to make your submission file less than 10MB as you may have issues uploading large files onto MyAberdeen.
 - Indicate clearly in your submission which item each solution is for. If we cannot identify this, you may be marked down.
1. **(Multi-Agent Interactions)** Suppose we have a game with two players. Player 1 has two options of moves, C and B , and player 2 has two options of moves, E and D . The utility/payoff function for player 1 is $u_1(C, E) = 10$, $u_1(C, D) = 0$, $u_1(B, E) = 20$, and $u_1(B, D) = 10$. The utility/payoff function for player 2 is $u_2(C, E) = 20$, $u_2(C, D) = 10$, $u_2(B, E) = 10$, and $u_2(B, D) = 0$. You should:
- a) Represent the game as a payoff matrix. **(1 mark)**
 - b) Provide the dominant strategy for player 1 and justify your answer. Answers without justification will merit 0 marks. **(1 mark)**
 - c) Provide the dominant strategy for player 2 and justify your answer. Answers without justification will merit 0 marks. **(1 mark)**
 - d) Provide the (pure strategy) Nash equilibria (if there are any) and justify your answer. Answers without justification will merit 0 marks. **(2 marks)**