

CS 411 - Artificial Intelligence I
Fall 2019
Assignment 8
Department of Computer Science, University of Illinois at Chicago

Total Points: 25

1. Give a precise definition of the following terms: (5 X 2 = 10)

- A. Knowledge-base
- B. Inference
- C. Model
- D. Entailment
- E. Valid Sentence

2. Suppose a knowledge base has following sentences (15)

Sam plays baseball or Paul plays baseball

Sam plays baseball or Ryan doesn't play baseball

Represent the knowledge base as a boolean expression using propositional symbols and logical connectives [3]

Does this knowledge-base entail the following? If yes provide the reason why and if not provide a counter-example that there exists a model where KB is true but the sentence is false

- A. Sam and Ryan both play baseball (1 + 5)
- B. At least one among Sam, Paul and Ryan play baseball (1 + 5)