

Air University Islamabad (Department of computer Science)

Artificial Intelligence – 7B Quiz

NO. 1

Semester: Fall 2025	Max Marks: 10
Instructor: Sara Ibrahim	
Date: 10 th Oct, 2025	
Name:	Reg. No.

Quiz 1	CLO-1	PLO-2	C2(understand)	GA-2
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Question1: Algorithm Design for a Model-Based Reflex Agent (10 Marks)

Scenario:

A Smart Home Temperature Control System is designed to maintain a comfortable indoor temperature automatically.

- The system uses sensors to detect the current room temperature and external weather conditions.
- It keeps an internal model of past temperature readings and user preferences.
- Based on this internal model and the current percepts, it decides whether to turn the heater ON, turn the air conditioner ON, or do nothing.

Write a pseudocode algorithm for this Model-Based Reflex Agent that:

1. Uses current percepts (temperature and weather).
2. Refers to its internal state/model (previous readings or preferred comfort range).
3. Chooses the appropriate action (e.g., heat, cool, or idle).
4. Updates its internal model after taking the action.

Question2: What is PEAS for a self-driving car?

