National University

of Computer & Emerging Sciences Peshawar Campus

Student Name: _____   Roll No: _____

Program: CS-18 A&B   Examination: MOCK
Semester: SPRING – 2021   Total Marks: **60** Weightage: **30**
Time Allowed: 20:00 minutes   Date: 19/05/2021
Course: Artificial Intelligence (CS 401 & 461) Instructor: Dr. Hafeez ur Rehman

NOTE: Attempt all questions. Distribute your time according to question's overall weightage.

Time Allowed: 15 minutes
Submissions after 15 minutes will not be accepted.

Question # 01:   [**Marks: 5 +10**]

1. Explain with example the following statement in the context of rational agents: "**A lot of rational behavior has nothing to do with logic**"?

2. Consider an unbounded search tree with a branching factor of 200 and depth of the shallowest goal state at 10th level (assuming the worst case). What is Time and Space complexity (**in terms of number of nodes**) of BFS, DFS and Iterative deepening search strategies for this tree (don't write asymptotic notation but actual number of nodes)? Assuming the goal test is applied before node expansion.