



Daffodil International University
Department of Computing and Information System
Quiz 2 (Fall 2026), Section: A
Course code: CIS313, Course title: Artificial Intelligence

Time: 30 minutes

Full marks: 15

1. a) Informed search differs from uninformed search because it: 1
 - (i) Explores nodes in a random order (ii) Uses problem-specific knowledge to search more efficiently
 - (iii) Always uses a stack as the frontier (iv) Never needs a goal test
- b) A* search expands the node with the lowest value of $[h(n) \text{ is heuristic function}][g(n) = \text{cost to reach node}]$: 1
 - (i) $h(n)$ (ii) $g(n)$ (iii) $g(n) + h(n)$ (iv) $g(n) - h(n)$
- c) In propositional logic, the implication $P \rightarrow Q$ is false only when: 1
 - (i) P is false, Q is false (ii) P is false, Q is true (iii) P is true, Q is false (iv) P is true, Q is true
- d) Which statement about greedy best-first search is correct? 1
 - (i) It always finds the optimal path (ii) It uses no heuristic
 - (iii) It expands the deepest node first (iv) It uses only $h(n)$ and may not find the optimal path
- e) In Minimax, the goal of the MIN player is to: 1
 - (i) Maximize the score (ii) Pick moves randomly (iii) Minimize the score (iv) Always move first
2. What is a heuristic function? Give one example of a heuristic for finding a path in a maze. 2
3. Name the six components used to define a game in adversarial search formally. 3
4. Let $P = \text{true}$, $Q = \text{false}$ and $R = \text{false}$. Find the truth value of 2
 - (a) $(P \vee Q) \rightarrow R$ (implication)
5. Use model checking to determine whether $KB \models S$. Complete the KB column and state your conclusion. 3
M: It is a Wednesday. N: It is cloudy. S: Tamim will go for a walk.
KB: $(M \wedge \neg N) \rightarrow S$, M, $\neg N$ Query: S

M	N	S	KB
false	false	false	
false	false	true	
false	true	false	
false	true	true	
true	false	false	
true	false	true	
true	true	false	
true	true	true	