Nepal college of information technology

(Unit test)

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| Level: Bachelor | Semester-Spring-2014 | Full Marks: 70 |
| Programme: BE IT | | Pass Mark: 35 |
| Course: Intelligent System | | Time : 2hrs. |

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| *Candidates are required to give their answers in their own words as far as practicable.* |
| *The figures in the margin indicate full marks.* |
| Attempt all the questions. |

1. What is an AI. Discuss about its Application and Importance. [**8**]

2. Define Knowledge and Learning and its importance. [**2**]

3. What is an Agent. Write about its types and discuss about Goal Based and Utility Based Agent.[**10**]

4. What is an Environment. Discuss about its types. [**6**]

5. What is searching, its types, searching Steps and criteria to measure searching performance? [**10**]

6. Define Breath First Search (DFS) and Depth First Search (DFS). Calculate Time complexity of DFS. [**10**]

7. Define MinMax Algorithm and Alpha Beta Pruning.[**4**]

8. Define A\* algorithm , Best First Search, Hill Climbing Search. Using the A\* algorithm work out a route from town A to town M. Use the following cost functions.

* G(n) = The cost of each move as the distance between each town (shown on map).
* H(n) = The Straight Line Distance between any town and town M. These distances are given in the table below.

Provide the search tree for your solution and indicate the order in which you expanded the nodes. You should no re-visit states previously visited. Finally, state the route you would take and the cost of that route.

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| Straight Line Distance to M | | | | | | | |
| **A** | 51 | **E** | 42 | **I** | 50 | **M** | 0 |
| **B** | 50 | **F** | 14 | **J** | 32 |  |  |
| **C** | 32 | **G** | 33 | **K** | 41 |  |  |
| **D** | 28 | **H** | 43 | **L** | 56 |  |  |

