CSCI3230 Fundamentals of Artificial Intelligence
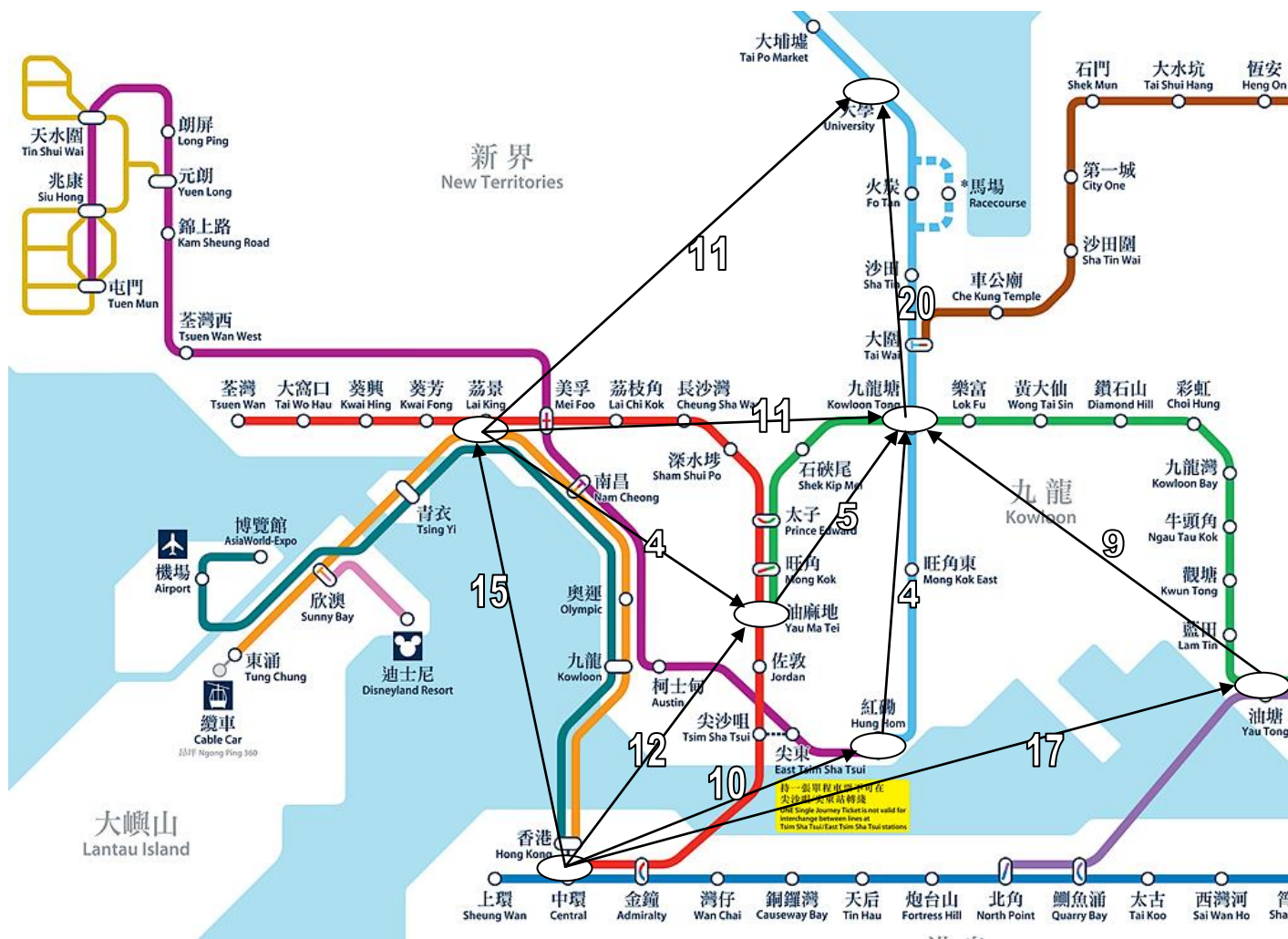## Written Assignment 2 (Optional)
Due date: 23:59:59 (GMT +08:00), 21 October, 2013
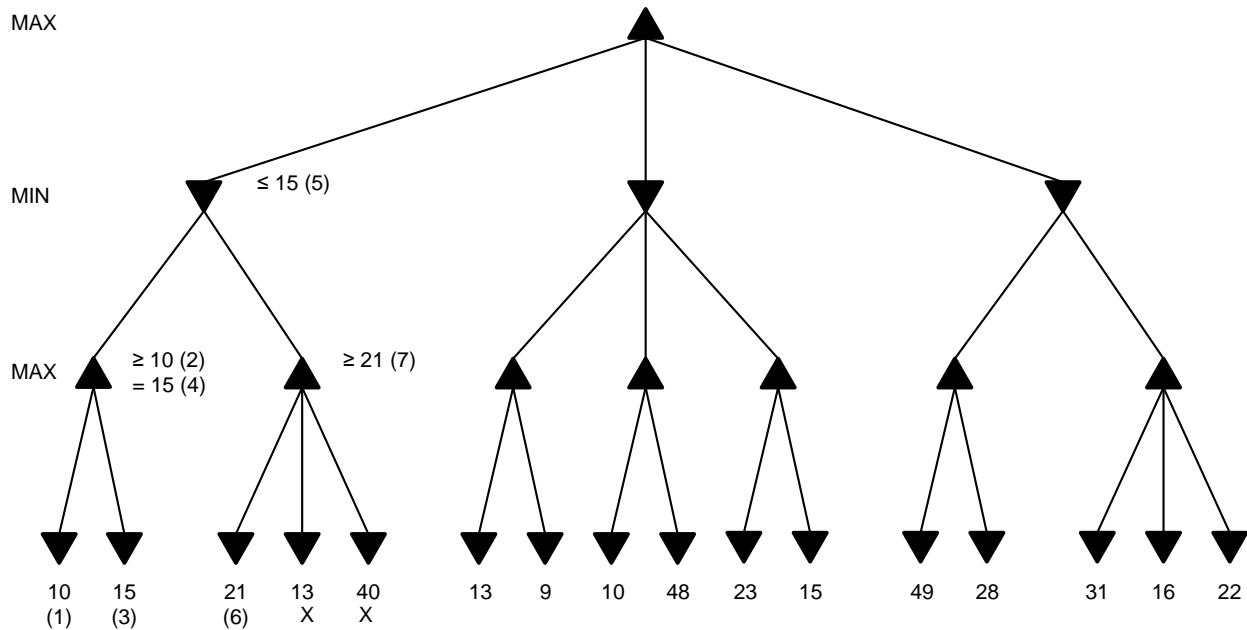
1. Questions

    (a) The distances between some places and the estimated distances to University are shown in the map and the table respectively below. Use both the following two algorithms to search for a shortest path from **Central** to **University**. Show **all** your steps and state the paths and costs clearly. (In each step, you do not need to consider the districts you have just visited. It is just a virtual situation, the tutor suggest you not being serious about the distances)

    i. Uniform-cost search with path cost

    ii. A* search

Heuristic Estimated distances to University			
Central	20	LaiKing	5
Yau Ma Tei	24	Hung Hom	20
Yau Tong	10	Kowloon Tong	18
University	0		

(b) Use the following three-ply game tree to **describe** and <u>show</u> the basic principles of the minimax algorithm with **alpha-beta pruning** step-by-step. Please **COPY** the game tree and indicate the sequence (steps) of your search with brackets.

MAX

MIN   ≤ 15 (5)

MAX   ≥ 10 (2)   ≥ 21 (7)
       = 15 (4)

10   15   21   13   40   13   9   10   48   23   15   49   28   31   16   22
(1)   (3)   (6)   X   X

2. Assignment Submission

You **MUST** complete this assignment by using any one of the computer text editors (e.g. MS Word, WordPad, iWork Pages… etc.) and then save the document to PDF format with A4 printable page size. Scan version of the hand written work is **NOT** accepted. Please limit the file size of the PDF file less than 1MB.

You **MUST** submit the PDF file to the submission system on our course homepage (within CUHK network), otherwise, we will **NOT** mark your assignment.

3. Important Points

You MUST STRICTLY follow these points:

   a. You MUST strictly follow the submission guidelines.
   b. Remember to type your FULL NAME, STUDENT ID on the assignment.
   c. Late submission will NOT be entertained according to our submission system settings.
   d. Plagiarism will be seriously punished.