AI Foundations & Applications (AI61005)
Class Test 1
September 6, 2021
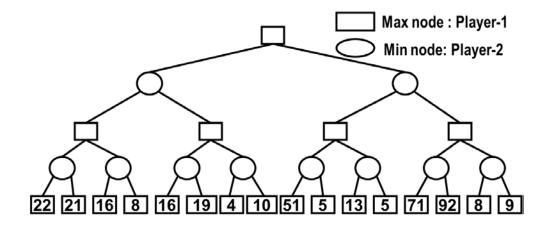**Question Paper has THREE Parts. This is PART C – the third and last part**
Time 20 Minutes
Answer All Questions
Write your name and roll number on every sheet.
Try to use one page to answer this question, at most a total of two pages
Combine the sheets into a single pdf and upload using the Google Form provided.

4. Consider the Game Tree below

a. Draw the game tree and indicate the list of edges which will be pruned if we perform alpha-beta pruning in **left to right order**.

b. In the diagram of (a) above, write down the final alpha / beta values of every node on completion of the algorithm in **left to right order.** (Please note that the final alpha-beta value at the end of the algorithm may not be the min-max value at the node.)

c. Draw the game tree and indicate the list of edges which will be pruned if we perform alpha-beta pruning in **right to left order**.

d. In the diagram of (c) above, write down the alpha / beta values of every node on completion of the algorithm in **right to left order.** (Please note that the final alpha-beta value at the end of the algorithm may not be the min-max value at the node.)

e. Is it possible to have a game tree where the **alpha-beta pruning algorithm does not prune any edge / node** if searched from **left to right order**? If so, draw such a tree of the same structure as shown in the figure above. If you think that it is not possible to have such a set of values, justify your answer.

[2+2+2+2+4 = 12 marks]