AI pract 3

1)

tree={

'A':['B','C'],

'B':[3,5],

'C':[6,9],

}

def minimax\_alpha\_beta(node,depth,alpha,beta,max\_player):

if depth == 0:

if node in tree:

return tree[node] [0] if max\_player else tree[node] [0]

else:

return node

if max\_player:

value= float('-inf')

for child in tree[node]:

value=max(value,minimax\_alpha\_beta(child,depth- 1,alpha,beta,False))

alpha=max(alpha,value)

if alpha>=beta:

print(f"Pruning branch at node {node}")

break

return value

else:

value=float('inf')

for child in tree[node]:

value=min(value,minimax\_alpha\_beta(child,depth - 1,alpha,beta,True))

beta=min(beta,value)

if beta<=alpha:

print(f"Pruning branch at node {node}")

break

return value

best\_score=minimax\_alpha\_beta('A',1,float('-inf'),float('inf'),True)

print(f"The best score is:{best\_score}")

o/p

The best score is:3

2)

import random

def play():

user= input("Enter your choice from rock,paper,scissor:").lower()

choices=['rock','paper','scissor']

computer= random.choice(choices)

print(f"\n You choose: {user}")

print(f"Computer choose: {choose}")

if user == computer:

return "It's a Tie!"

elif (user == "rock" and computer == "scissors") or\

(user == "Paper" and computer == "rock") or\

(user == "scissors" and computer == "paper") :

return "you win!"

elif user not in choices:

return "Invalid choice!"

else:

return "computer wins!"

print(play())

o/p:

Enter your choice from rock,paper,scissor:rock

You choose: rock

Computer choose: scissor

computer wins!