3. Write the Python Program for Water Jug Problem

from collections import deque

def get\_next(x, y, a, b):

return set([

(a, y), (x, b), (0, y), (x, 0),

(min(x + y, a), y - (min(x + y, a) - x)),

(x - (min(x + y, b) - y), min(x + y, b))

])

def bfs(a, b, target):

vis = set(); q = deque([((0, 0), [])])

while q:

(x, y), path = q.popleft()

if (x, y) in vis: continue

vis.add((x, y)); path += [(x, y)]

if target in (x, y):

for i, j in path: print(f"Jug1: {i}L, Jug2: {j}L")

return

for nxt in get\_next(x, y, a, b): q.append((nxt, path))

bfs(4, 3, 2) # Jug1=4L, Jug2=3L, Target=2L

OUTPUT:

