***2# Python program for all matching sets***

1)

from itertools import chain, combinations

def powerset(seq):

    """

    Returns all the subsets of this set. This is a generator.

    """

    if len(seq) <= 1:

        yield seq

        yield []

    else:

        for item in powerset(seq[1:]):

            yield [seq[0]]+item

            yield item

2)

# imports

import networkx as nx

from networkx.algorithms import matching

# Initialise graph

B = nx.Graph()

# Add edges only between nodes of opposite node sets

edge = [(1, 2), (2,3), (2,6), (3,4), (4,5), (5,6), (5,7), (7,8), (7,10), (8,9), (10,11)]

B.add\_edges\_from(edge)

P\_edge = list(powerset(edge))

count = 0

for sub in P\_edge:

  if matching.is\_matching(B,sub):

      count += 1

print(count)