Cambridge International AS & A Level

Mathematics

9709/52

Paper 5 Probability & Statistics 1

May/June 2025

Question No (6)

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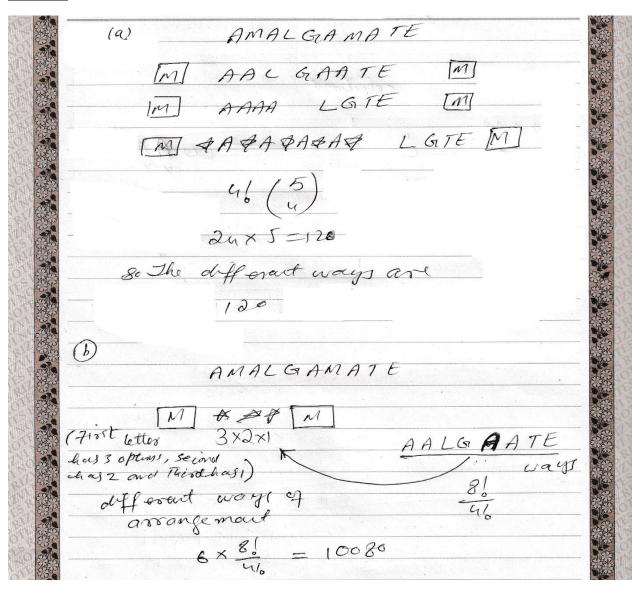
Question No (6)

- (a) Find the number of different ways in which the 10 letters in the word AMALGAMATE can be arranged so that there is an M at the beginning, an M at the end and no As are together.
- (b) Find the number of different ways in which the 10 letters in the word AMALGAMATE can be arranged with exactly 3 letters between the two Ms.

Five letters are selected from the 10 letters in the word AMALGAMATE.

(c) Find the number of different selections in which the five letters include at least one M and at least two As.

Solution:



@ AMALGAMATE

combination selections

MM AAA

MM AAA

C, 4

LG AATE

XX

MAAA

C, 4

MG AATE

MGAATE

MAAAA

MAAAA

Total different selections = 1+4+6+4+1 = 16