

Subject 8

Please do not write on the exam paper.

Mass produced ceramic *tiles* are inspected for defects.

The probability that a tile has air bubbles is 0.0015.

If a tile has air bubbles, then the probability that it is also cracked is 0.55, while the probability that a tile free from air bubbles is cracked is 0.0055.

Let A be the event : *The tile has air bubbles*.

Let C be the event : *The tile is cracked*.

a) Draw a tree diagram of the situation. (Write the probabilities on each branch.)

b) What is the probability that a tile selected at random is cracked ?

c) The probability that a tile is discoloured is 0.0065.

Given that discolouration is independent of the other two defects, find the probability that a tile selected at random has no defects. (Let D be the event : *The tile is discoloured*.)

Nota:

tile : carreau de carrelage.