Subject 23 **PROBABILITIES**

Please do not write on this exam paper and give it back at the end of the test

At the 10 o'clock break, Miriam does one of the three following things, at random: she either drinks an orange juice, or she eats an apple or she eats a cereal bar that she has brought.

- If she drinks an orange juice, then at noon (at 12 o'clock), the probability that she chooses an orange at her meal will be 0.05.
- If she eats an apple, the probability that she chooses an orange at her meal will be 0.2.
- If she eats a cereal bar, the probability that she chooses an orange at her meal will be 0.5.

We note the following events as follows:

J: « Miriam drinks an orange juice »;

A: « Miriam eats an apple »;

B: « Miriam eats a cereal bar»;

O: « Miriam eats an orange »;

1º) Draw a probability tree diagram of the situation.

2º) Calculate $P(J \cap O)$; $P(O \cap B)$ and $P(O)$.

3º) What is the probability that Miriam had drunk an orange juice at 10 o'clock knowing that she had eaten an orange at her meal?