4.3 Conditional Probability

Question Paper

Course	CIE IGCSE Maths
Section	4. Probability & Statistics
Topic	4.3 Conditional Probability
Difficulty	Medium

Time allowed: 30

Score: /24

Percentage: /100

Question 1

Morgan picks two of these letters, at random, **without** replacement.

Find the probability that he picks

i)
the letter Y first,

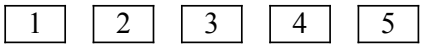
[1]

ii)
the letter B then the letter Y.

[2]

[3 marks]

Question 2



The diagram shows five cards.
Two of the cards are taken at random, without replacement.

Find the probability that both cards show an even number.

[2]

[2 marks]

Question 3

A box contains 20 packets of potato chips.
6 packets contain barbecue flavoured chips.
10 packets contain salt flavoured chips.
4 packets contain chicken flavoured chips.
Maria takes two packets at random **without replacement**.

Show that the probability that she takes two packets of salt flavoured chips is $\frac{9}{38}$.

[2]

[2 marks]

Question 4

A bag contains 4 red marbles and 2 yellow marbles.
Behnaz picks two marbles at random without replacement.

Find the probability that

i)
the marbles are both red,

[2]

ii)
the marbles are not both red.

[1]

[3 marks]

Question 5

Ravi has a bag which contains 10 red balls and 8 blue balls.
Ravi takes two balls at random from his bag, without replacement.

Find the probability that one ball is red and one ball is blue.

[3]

[3 marks]

Question 6

A group of 200 people were asked which city they would like to visit next.
The table shows the results.

City	London	Paris	New York	Tokyo
Number of people	50	48	56	46

Two people are chosen at random from the group of 200.

Find the probability that one person would like to visit London next and the other person would like to visit New York next.
Give your answer as a percentage.

..... % [3]

[3 marks]

Question 7

A box contains 7 black pens and 8 orange pens.
Two pens are chosen at random from this box without replacement.

Calculate the probability that at least one orange pen is chosen.

[3]

[3 marks]

Question 8

A box contains 15 red pencils, 8 yellow pencils and 2 green pencils.
Two pencils are picked at random without replacement.

Find the probability that at least one pencil is red.

[3]

[3 marks]

Question 9

The speed, v km/h, of each of 200 cars passing a building is measured.
The table shows the results.

Speed (v km/h)	$0 < v \leq 20$	$20 < v \leq 40$	$40 < v \leq 45$	$45 < v \leq 50$	$50 < v \leq 60$	$60 < v \leq 80$
Frequency	16	34	62	58	26	4

Two of the 200 cars are chosen at random.

Find the probability that they both have a speed greater than 50 km/h.

[2]

[2 marks]