

COUNTING & PROBABILITY (Q 6, PAPER 2)

2010

- 6 (a) (i) In how many different ways can a committee of four people be selected from ten people?
- (ii) If one particular person must be on the committee, in how many different ways can the committee be selected?
- (b) Tickets for a raffle are placed in a box.
The box contains 15 blue tickets and 10 red tickets.
Tickets are drawn at random from the box and they are not replaced.
What is the probability that
- (i) the first ticket drawn is red
- (ii) the first ticket drawn and the second ticket drawn are both red
- (iii) the first ticket drawn is red and the second ticket drawn is blue
- (iv) the first two tickets drawn are different in colour?
- (c) A code consists of a four-digit number which is formed from the digits 3 to 9 inclusive.
No digit can occur more than once in the code.
- (i) Write down the smallest possible four-digit code.
- (ii) How many different codes are possible?
- (iii) How many of the four-digit codes are greater than 6000?
- (iv) How many of the four-digit codes are divisible by 2?

ANSWERS

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|---|-----------------------|---------------------|---------------------|--------------------|
| 6 | (a) (i) 210 | (ii) 84 | | |
| | (b) (i) $\frac{2}{5}$ | (ii) $\frac{3}{20}$ | (iii) $\frac{1}{4}$ | (iv) $\frac{1}{2}$ |
| | (c) (i) 3456 | (ii) 840 | (iii) 480 | (iv) 360 |