

COUNTING & PROBABILITY (Q 6, PAPER 2)

2002

- 6 (a) There are eight questions on an examination paper.
- (i) In how many different ways can a candidate select six questions?
 - (ii) In how many different ways can a candidate select six questions if one particular question must always be selected?
- (b) A meeting is attended by 23 men and 21 women.
Of the men, 14 are married and the others are single.
Of the women, 8 are married and the others are single.
- (i) A person is picked at random. What is the probability that the person is a woman?
 - (ii) A person is picked at random. What is the probability that the person is married?
 - (iii) A man is picked at random. What is the probability that he is married?
 - (iv) A woman is picked at random. What is the probability that she is single?
- (c) The digits 0, 1, 2, 3, 4, 5 are used to form four-digit codes. A code cannot begin with 0 and no digit is repeated in any code.
- (i) Write down the largest possible four-digit code.
 - (ii) Write down the smallest possible four-digit code.
 - (iii) How many four-digit codes can be formed?
 - (iv) How many of the four-digit codes are greater than 4000?

ANSWERS

- | | | | | |
|---|-------------------------|--------------------|-----------------------|----------------------|
| 6 | (a) (i) 28 | (ii) 21 | | |
| | (b) (i) $\frac{21}{44}$ | (ii) $\frac{1}{2}$ | (iii) $\frac{14}{23}$ | (iv) $\frac{13}{21}$ |
| | (c) (i) 5,432 | (ii) 1,023 | (iii) 300 | (iv) 120 |