

2017/2018

Q3 i) no repetition

$$= \frac{10!}{2!2!2!}$$
$$= 453600$$

$$\text{ii) } C({}^n_r) = C(10, 2) = C(11, 2) = \frac{11!}{2!(10-1)!} = 55$$

or

$$C(10, 3) = C(12, 3) = \frac{12!}{3!(10-1)!} = 220$$

or

$$C(10, 4) = C(13, 4) = \frac{13!}{4!(10-1)!} = 715$$

$$C(r+n-1, r) = \frac{(r+n-1)!}{r!(n-1)!} \therefore 990 \text{ ways}$$