Permutations and Combinations – Quick Check

MJC/P2/8

(a)(i)	1 'B', 2 'E', 1 'A', 3 'N', 3 'T' No. of ways $= \dfrac{8!}{3!2!2!} = 1680$
(ii)	No. of ways $= \dfrac{4!}{2!} \times \binom{5}{3} \times \binom{8}{3} = 6720$
(b) **(i)**	No. of ways = No. of ways $= \binom{5}{4} \times \binom{10}{4} 8! = 42336000$
(ii)	No. of ways $= \binom{3}{1}\binom{4}{2}\binom{10}{1}\binom{9}{2}\dfrac{8!}{2!2!} = 65318400$

TPJC/P2/7

(a) No. of ways = (8-1)! = 5040

(b) No. of ways = (4-1)! 4! = 144

(c) No. of ways = 3 x 2 x 1 x 2^4 x 8 = 768
[3 ways to put 2nd pair, 2 ways to put 3rd pair, 1 way to put 4th pair,
2 ways for each pair to change position and 8 seats numbered]