Permutation and Combination Questions for Bank Exams Pdf

1. A committee of 5 members is to formed out of 3 trainees, 4 professors and 6 research associates. In how may different ways can this be done if the committee should have 2 trainees and 3 research associates?

a. 15

b. 45

c. 60

d. 9 -→

Ans:

Required number of ways = $({}^3C_2 \times {}^6C_3) = ({}^3C_1 \times {}^6C_3)$

$$= \left(3 \times \frac{6 \times 5 \times 4}{3 \times 2 \times 1}\right) = 60.$$

2. In how many different ways can the letters of the word DISPLAY be arranged?

a. 720

b. 1440

c. 2520

d. 5040 --→

Ans:

The given word contains 7 letters, all different.

$\therefore$ Required number of ways $= {}^{7}P_{7} = \lfloor 7$

$= (7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1) = 5040.$

3. In how many different ways can the letters of the word RIDDLED be arranged?

a. 840

b. 1680

c. 2520

d. 5040 -→

Ans:

The given word contains 7 letters of which D is taken 3 times.

$\therefore$ Required number of ways $= \dfrac{\lfloor 7}{\lfloor 3} = \dfrac{7 \times 6 \times 5 \times 4 \times \lfloor 3}{\lfloor 3}$

$= (7 \times 6 \times 5 \times 4) = 840.$

4. In how many different ways can the letters of the word INCREASE be arranged?

a. 40320

b. 10080

c. 20160

d. 64 →

Ans:

The given word contains 8 letters of which E is taken 2 times.

∴ Required number of ways

$$= \frac{\lfloor 8}{\lfloor 2} = \frac{8\times7\times6\times5\times4\times3\times2\times1}{2} = 20160.$$

5. In how many ways a committee consisting of 5 men and 6 women can be formed from 8 men and 10 women?

a. 266

b. 5040

c. 11760

d. 86400 -→

Required number of ways = $({}^{8}C_5 \times {}^{10}C_6) + ({}^{8}C_3 \times {}^{10}C_4)$

$$= \frac{8\times7\times6}{\lfloor 3} \times \frac{10\times9\times8\times7}{\lfloor 4}$$

$$= \frac{8\times7\times6}{6} \times \frac{10\times9\times8\times7}{4\times3\times2\times1} = 11760.$$