Krishraaj P T
PA 20   41

Q.1.   A L L A H A B A D
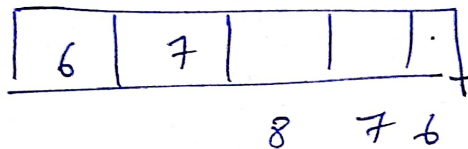
Total letters — 9

no of permutations = $\dfrac{9!}{4! \, 2!}$

$$= \dfrac{9 \times 8 \times 7 \times 6 \times 5}{2}$$

$$= \underline{7560}$$

Q.2.

6	7		.

     8   7 6

no. of telephone no (5 digit) that can be generated starting with 6, 7 are

$8 \times 7 \times 6$

$= 8 \times 42$

$= \underline{336}$

Q.3 No. of girls = 4

No. of Boys = 7

Team of 5 members without girls

$$= {}^7C_5$$

$$= \frac{7!}{5! \, 2!} = \frac{7 \times 6}{2 \times 1} = 21$$

So   21 ways.

Q.4

$\overset{\downarrow}{5} \ \overset{\downarrow}{5} \ \overset{\downarrow}{5}$
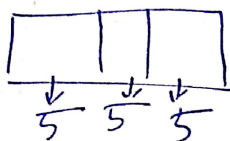
No. of diff 3 digit numbers formed using 1 to 5 with repetition

$$= 5 \times 5 \times 5$$

$$= 125.$$

Q.5 Total no. of bulbs = 5

No. of defective bulbs = 3

No. of non-defective bulbs = 2

No. of Trials in which room can be lighted

$$= {}^2C_1 \times {}^3C_1 + {}^2C_2 = 2 \times 3 + 1$$

$$= 7 \text{ ways.}$$