Permutations Ex 16.5 Q1(v)

There are 8 letters in the word 'PAKISTAN' out of which 2 are A'S, and the rest are all distinct.

So, the total number of words

$$= \frac{8!}{2!}$$

$$= \frac{8\times7\times6\times5\times4\times3\times2!}{2!}$$

$$= 8\times7\times6\times5\times4\times3$$

$$= 20160$$

Permutations Ex 16.5 Q1(vi)

There are 6 letters in the word 'RUSSIA' out of which 2 are S's, and the rest are all distinct.

So, the total number of words

$$= \frac{6!}{2!}$$

$$= \frac{6\times5\times4\times3\times2!}{2!}$$

$$= 6\times5\times4\times3$$

$$= 360$$

Permutations Ex 16.5 Q1(vii)

There are 6 letters in the word 'SERIES' out of which 2 are S's, 2 are E's and the rest are all distinct.

so, the total number of words

$$= \frac{6!}{2!\ 2!}$$

$$= \frac{6\times5\times4\times3\times2!}{2!\ 2!}$$

$$= \frac{6\times5\times4\times3}{2\times1}$$

$$= 6\times5\times2\times3$$

$$= 180$$

Permutations Ex 16.5 Q1(viii)

There are 9 letters in the word 'EXERCISES' out of which 3 are E's, 2 are S's and the rest are all distinct.

So, the total number of words

$$= \frac{9!}{3!\ 2!}$$

$$= \frac{9\times8\times7\times6\times5\times4\times3!}{3!\times2\times1}$$

$$= 9\times8\times7\times6\times5\times2$$

$$= 30240$$

Permutations Ex 16.5 Q1(ix)

There are 14 letters in the word 'CONSTANTINOPLE' out of which 2 are O's, 3 are N's, 2 are T's and the rest are all distinct.

So, the total number of

$$\text{words} = \frac{14!}{2!\ 3!\ 2!}$$

$$= \frac{14!}{2\times3\times2\times2}$$

$$= \frac{14!}{24}$$

********** END **********