Step-1

Let G be a graph with 4 nodes and 6 edges.

We need to find all 16 spanning trees.

In 4 nodes, the spanning tree having 3 edges.

Step-2

The number of selections 3 edges from 6 edges is,

$$\begin{aligned} {}^{6}C_{3} &= \frac{6!}{3!3!} \\ &= \frac{4\times5\times6}{1\times2\times3} \\ &= 20 \end{aligned}$$

Out of 20 sections 4 choices gives triangle. These are not spanning trees.

Thus, $20-4=16$ spanning trees

Therefore, there are $\boxed{4\text{ choices give trangles, leaving }16\text{ spanning trees}}$.