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Let R be a commutative Noetherian ring, A a finitely generated graded R -algebra where $A = R[A_1]$, and M a finitely generated graded A -module. There are several extensions of the classical multiplicity $\deg(M)$ seeking to account for the behavior of each associated prime of M relatively to A and/ or to R . Here we assign to M a new degree $\text{jdeg}(M)$, which coincides with $\deg(M)$ when R is an Artinian local ring. The new construction $\text{jdeg}(M)$, with a global nature (in contrast to other degree functions usually requiring R to be local), captures various aspects of M . An important application of jdeg is to measure the complexity of the chains of graded subalgebras between A and its integral closure \overline{A} , constructed by general algorithms. This gives an extension of recent results to very general graded algebras. (Received January 24, 2006)