Generalized injectivity and approximations

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The importance of injective modules in algebra comes from two facts: (i) their structure is well-known for many classes of rings, and (ii) each module has a (unique) injective envelope. In this work, we investigate approximation properties of some classic generalizations of injective modules, more precisely, the Ci- and quasi-injective modules. We prove that these classes provide for approximations only in exceptional cases (when all Ci modules are injective, or pure-injective).