Stellingen

behorende bij het proefschrift

On some classes of modules and their endomorphism rings

van **Mai Hoang Bien**

1. For any central simple algebra A, if the multiplicative group A^* of A is finitely generated, then A is finite.

2. Let R be a hereditary ring and A, B be indecomposable, injective right modules over R. Then every non-zero homomorphism $f : A \to B$ is surjective.

3. Let $M_i, i \in I$ be a family of indecomposable, quasi-injective modules. Every direct summand of $M = \bigoplus_{i\in I} M_i$ which is quasi-injective is a direct sum of indecomposable, quasi-injective submodules.

4. Let D be a division algebra and D' be the subgroup of the multiplicative group D^* of D generated by all commutators $aba^{-1}b^{-1}$ where a, b range over D^*. Then the center of D' is finite.

5. Let A be an indecomposable, injective right module over an arbitrary ring. Then the endomorphism ring of $A^{(\kappa)}$ has a unique maximal ideal for any non-zero cardinal κ (Proposition 3.8.1).

6. Over a perfect ring, a module is artinian if and only if it is noetherian (Theorem 4.5.5).

7. An injective module is square-free if and only if its endomorphism ring is quasi-duo (Theorems 2.3.9).

8. For any division algebra D with center F, there exist a, b in D such that $F(ab - ba)$ is a maximal subfield of D (Theorem 5.2.5).