



YOGYAKARTA STATE UNIVERSITY
FACULTY OF MATHEMATICS AND NATURAL SCIENCES

FINAL EXAM 2011/2012

COURSE	: ABSTRACT ALGEBRA	LECTURER	: MUSTHOFA, M.Sc
CODE	: MAA 324	DAY & DATE	: WED/ 20/06/ 2012
CLASS	: P MAT INT 2009	DURATION	: 100 ' (13.00-14.40)
SEMESTER	: 6	ROOM	: D07 310

1. Let G with a binary operation $*$ be a group. Now, choose one element $g \in G$ and define new binary operation $\#$ in G as follow : $a \# b = a * g * b$.

Check whether $(G, \#)$ form a group or not.

2. Determine all subgroup of $\mathbb{Z}_{20} = \{\overline{0}, \overline{1}, \overline{2}, \dots, \overline{19}\}$
3. Find the number of generator of cyclic group $\mathbb{Z}_{2717} = \{\overline{0}, \overline{1}, \overline{2}, \dots, \overline{2716}\}$
4. Let G be a group and $g \in G$. A function $f : G \rightarrow G$ is defined by $f(x) = g^{-1}xg, \forall x \in G$. Show that f is an automorphism.

GOOD LUCK

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