

Chemistry and physics third year( education).

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Faculty of science	( نظريه المجموعات ) groups theory
Department of mathematics	second term exam

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تناول بالبحث احد الموضوعات التاليه

- (1)Permutation  $(S_n, o)$ , even and odd permutation, order of permutation.
- (2)Congruent relation modulo  $n$  on  $Z$  is equivalence relation,  $(Z_n, \oplus)$  is group.
- (3)Subgroups, cyclic sub group, normal subgroups.
- (4)Cosets and lagrange's theorem, relation between order of a group and its subgroups.
- (5)Group homomorphism
- (6) Isomorphism, isomorphic groups.
- (7) $A_3, A_4$  the set of all even permutation of  $(S_3, o)$ ,  $(S_4, o)$  respectively and its subgroups.
- (8) How build subgroups for cyclic group and how determine that a subset of a group is subgroup
- (9) On the functions and the composition operation of the functions.
- (10)Comparison between Lagrange's theorem and Cauchy's theorem.