

**EXAM FOR “ALGEBRAIC STRUCTURES” (6ALGS)
SUMMER SEMESTER 2023/2024**

QUESTIONS SET NO. 8

1.

Formulate and prove the second and third homomorphism theorems for algebras.

2.

Is it true that any group satisfying the condition

a) $x^2 = 1$

b) $x^3 = 1$

for any element x of the group, is abelian?

3.

Give example of a group whose group of inner automorphisms is isomorphic to $\mathbb{Z}/2\mathbb{Z}$, and the group of all automorphisms is isomorphic to $\mathbb{Z}/3\mathbb{Z}$.