



লক্ষীমপুৰ তেলাহী কমলাবৰীয়া মহাবিদ্যালয়  
**LAKHIMPUR TELAHI KAMALABORIA COLLEGE**  
Azad, North Lakhimpur, Assam - 787031

ASSIGNMENT

B.Sc.6<sup>th</sup> Semester 2020

**Mathematics (Major)**

Paper:MM 603 : Algebra and Partial Differential Equations

Date: Sept, 2020

Due date-

Max mark: 20

**All questions are compulsory**

1. (a) Define trivial automorphism (1)  
(b) Show that if  $G$  is non abelian group then  $f : G \rightarrow G$ , such that  $f(x) = x^{-1}$  is not an automorphism (3)
2. (a) If  $G$  is an infinite cyclic group, then determine  $\text{Aut}(G)$  (4)  
(b) Write when a ring is called a ring with unity (2)
3. (a) Write the Lagrange's auxiliary equations for the equation  
$$y^2p - xyq = x(z - 2y)$$
 (2)  
(b) Solve the following  
  1.  $a(p+q)=z$
  2.  $zp=-x$
  3.  $yp+xq=z-1$
  4.  $ap+aq=z$ (8)

**Best wishes**