

North Gauhati College

Department of Mathematics

Sessional Examination 2021

Abstract Algebra and Matrices (E-201)

QUIZ #1

Full Marks: 15

Time Duration: 1 hour

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INSTRUCTIONS TO CANDIDATES

1. This question paper contains **Three (3)** questions and comprises **One (1)** printed page.
  2. Answer all the questions.
  3. Write your **Name, GU Roll No., and Registration Number** .
  4. Submit the solutions as a single **PDF** file through the online portal of our college website under section “**Assignments**”.
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1. Answer the following questions : [5+5=10]
  - (a) Prove that set of natural number is a group with respect to addition.
  - (b) Show that a cyclic group is abelian.
2. Obtain the inverse of the following matrix, if exists using elementary row operations:

$$A = \begin{bmatrix} 0 & 1 & 2 \\ 1 & 2 & 3 \\ 3 & 1 & 1 \end{bmatrix}$$

[5]

**END OF PAPER**