



NATIONAL UNIVERSITY OF TECHNOLOGY, ISLAMABAD
QUIZ I (LINEAR ALGEBRA & ODE), FALL 2019
BET (MECHANICAL), DATE: SEPTEMBER 26, 2019

Q **Balancing a chemical equation** $wC_3H_8 + xO_2 \rightarrow yCO_2 + zH_2O$ means finding integers w, x, y, z such that the numbers of atoms of carbon (C), hydrogen (H) and oxygen (O) are the same on both sides of this reaction, in which propane C_3H_8 and O_2 give carbon dioxide and water. Find the **smallest positive integers** w, x, y and z using Echelon or Reduced Echelon Form. (*Hint: Compare the atoms of C, H and O on both sides*).

”Everything looks impossible to the people who never try anything.”