

ABSTRACT

Miranda A. Sihite, IDN 4203131031 (2024). Analysis of Student Misconceptions in Learning Buffer Solution Material Using Four-Tier Test with Certainty of Response Index Method.

This research aims to identify students' misconceptions about buffer solution material. This type of research uses a descriptive quantitative approach. The subjects in this research were 33 students from one class XI Science at SMA Negeri 1 Girsang Sipangan Bolon using a purposive sampling technique. The data analysis technique uses interpretation of the results of the four-tier diagnostic test with Certainty Response Index. Based on the results of data analysis, it is known that the percentage of misconceptions is 41%, not understanding concepts 32%, and understanding concepts 27%. The misconceptions that occur are in the medium category. The misconception profile for each buffer solution sub-material as follows: definition and properties of buffer solutions 37,6%, components of the buffer solution 42,5%, calculation of the pH value of the buffer solution 44%, and the role of buffer solutions for living things 40,6%. The biggest misconception sub-material is calculation of the pH value of the buffer solution 44%. The smallest misconception sub-material is definition and properties of buffer solutions 37,6%. The results of the research found that there are still many students who experience misconceptions, so further research needs to be carried out to identify student misconceptions in other materials.

Key words: *Misconceptions, Four-tier diagnostic test, Certainty of Response Index, and Buffer Solution.*