

CHAPTER V

CONCLUSION AND SUGGESTION

5.1. Conclusion

Based on the results of the research that has been carried out, it can be concluded that:

1. The characteristics of the four-tier diagnostic test instrument include:
 - a. 23 questions developed in the valid category.
 - b. The reliability of the developed four-tier diagnostic test is 0.816 on tier-1 and 0.843 on tier-3.
 - c. The difficulty level of 23 items consists of 2 questions in the easy category, 20 in the average category, and 1 question in the hard category in tier-1, and in tier-3 there are 2 questions in the easy category, 19 questions in the average category and 1 question in the hard categories.
 - d. The discrimination index of 23 questions consists of 20 accepted questions, 1 accepted with revised question, and 2 discarded questions on tier-1 and on tier-3 there are 20 accepted questions, 1 revised question, and 2 discarded questions.
 - e. The distractor in the answer choices for tier-1 questions has 1 distractor that does not function properly, while the distractor in the choice of reasons (tier-3) has 2 options that do not function properly.
2. There are 51% of students in the sound understanding category, 13% of students in the partial understanding category, 12% of students in the no understanding category, and 24% of students have misconceptions about the Heat and Temperature material. The highest misconception is in the concept of expansion coefficient, which is 51% and the lowest misconception is in the concept of heat, which is 6%.

5.2. Suggestions

Based on the research results, the following suggestions are given:

1. Four-tier diagnostic test instruments can be developed on materials other than Heat and Temperature,
2. Research instruments to analyze misconceptions on the concepts of Heat and Temperature need to be tested in a wider scope,
3. Ensure that the diagnostic instrument contains all the concepts of physics related to the material to be tested and each concept consists of the same number of questions,
4. The four-tier diagnostic test instrument can be used as a consideration for researching misconception analysis on other physics materials.
5. Physics teachers need to conduct remediation on the concept of Heat and Temperature on the material that is identified by misconceptions by improving the teaching system in identifying misconceptions so that it can provide meaningful learning. Teachers must be able to master and understand the concept of learning correctly so that students can easily understand and the material presented can be well received so that misconceptions do not occur again.