



**THE USE OF SCIENCE ARTICLES IN
“HELLO” MAGAZINES AS A MEANS OF TEACHING
READING COMPREHENSION**

**(An Action Research at the Eleventh Grade of IPA students of SMA N 1
Grobogan in the Academic Year of 2010/2011)**

a final project
submitted in partial fulfillment of the requirements
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in English

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Semarang, 31 Februari 2011

Yang membuat pernyataan,

Winarni

Motto and Dedication

- ◆ The Man who says he never has time is the laziest man.(Lichtenberg)
- ◆ Politeness is the oil which reduces the friction against each other.
(Demokritus).

Dedication:

- ◆ To my parents, my brother, my sister, and
my niece
- ◆ My lecturers
- ◆ My best friends

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ABSTRACT

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Reading is one of the four skills that should be mastered by students in the English learning process. By reading a passage, students were able to get information and help them to learn more about English. Unfortunately, it was often difficult to make students become interested in the reading passage especially in the foreign language. Giving such interesting materials and differences nuances of teaching learning process will be motivated students to read in English.

The research in this final project was focused on the use of cultural approach in teaching reading by using science articles in “Hello” magazines as a media. It aimed to improve students’ skills in reading comprehension. This study was carried out under the consideration that the students often encounter problems in comprehending the text passage.

The research was done in the form of action research, which was conducted through two cycles of activities. It was done to gain the data from students’ reading comprehensions improvement using cultural approach in teaching learning process. The data were collected in both qualitative and quantitative forms. The qualitative data were collected from questionnaires, whereas the quantitative data were collected from the result of the sequence of reading test.

The result of the study showed that the students’ skill in reading text increased. The sequence treatment using cultural approach was given to the students in the purposes of improving their knowledge about science information and solve theirs in understanding reading text.

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CHAPTER I

INTRODUCTION

This chapter presents introduction of the research that concludes about the analysis of introduction. It would be started from the analysis of background of study, the analysis of reason for choosing the topic, the analysis of statements of the problem, the analysis of objective of the study, the analysis of significance of study, the analysis of limitation of the study, the analysis of hypothesis, and outline of the report.

1.1 Background of the Study

Language as a means of communication is used among human beings in order to establish social relationship. They also can convey their messages, expressing information, thought, their idea, feeling and developing knowledge, technology and culture by using language. People of many countries in this world use different languages. Ramelan, (1992: 2) says that language as a means of communication is a system of arbitrary symbols by which human beings cooperate interact using language, people can express their feeling, ideas, thoughts, and attitudes, toward life and also expectancy to other people, such as when they need someone's help. It is, therefore, needed an international language as a means of communication to hold international relationships among those countries and English has been considered as the international one. For this, it is undeniable that English mastery is

very important for all who need progress. Brumfit (1982 : 2) says that English is an international language in that it is the widest spread medium of international communication, both because of a number and geographical spread of its native speakers and because of a large number of non native speakers who use it for part at least of their international contact.

Learning English includes four skills. They are correlated one to another. They are, listening, speaking, reading and writing. The students are expected to master all those skills in balance. As previously stated, one of the English skills which to be mastered is reading. MacKay in Simanjuntak (1998:15) defines that reading as an active process involving an interaction between thought and language. Reading will mean dealing with language messages in written or printed form. The relationship between reading and language are, first defines reading as decoding, as Perfetti (1985) glosses it, the skill of transforming printed words into spoken words. This decoding definition offers some good arguments. The second answer defines reading as the whole parcel of cognitive activities carried out by the reader in contact with a text. Thus Nuttall (1982), having considered definitions of reading in terms of reading in terms of reading aloud, or decoding, settles for the extraction of meaning from written message.

While, comprehension is frequently mentioned in cognitive and educational psychology, as well as, of course, the pedagogical literature. A focus on comprehension is in line with our feeling that this is what reading is 'about' i.e. getting information from written texts. And there is no doubt that our monitoring of our own reading comprehension is of major importance. Sticht (1984) argues that

claims for the possibility of reading much faster than listening rest it on confusion between skimming and scanning on the one hand and reading on the other.

As mentioned above, one of the factors that may influence the successes or failure in reading is the way of teaching. Nowadays, in teachers have a lot of ways to giving their lesson to students? They use media in teaching language. For example they use magazines. Magazines are a great source of ideas and materials for teaching and can keep your students interested for hours on a whole range of subjects. So in this study, I want to discuss the learning of English reading comprehension using science articles in Magazines because it is one of the interesting reading materials that are favored by students. I hoped that the students will be motivated to learn and read more English materials.

1.2 Reason for Choosing the Topic

I conduct this study with the following responses:

- 1) Senior High School students usually like reading magazines or newspapers because they can read it every time and everywhere include in the school.
- 2) Articles in Magazines can be used as one of the media for teaching in order to develop students' reading comprehension skill.
- 3) Reading articles' Magazines can enrich the students' vocabulary and knowledge of the articles.
- 4) The result of the study can support the teacher and the students in English teaching-learning process.

1.3 Statements of the Problem

Having found the general background of the problem in reading as stated above, my research of the problem of the study is how the science articles in Hello Magazines give a contribution to develop the students' ability in reading comprehension, learning grammar and also give more information about science.

1.4 Objective of the Study

The specific objective is as follow:

To describe how eleventh grade of IPA students use science articles in "Hello" magazines as a teaching reading comprehension.

1.5 Significance of Study

I hope that the result of the study will be useful to provide:

1) For the students:

I expect the students of SMA Negeri I Grobogan be motivated to improve themselves and learn English respectively so they can master it.

2) For the teacher:

I also expect to English teacher of SMA Negeri I Grobogan to use any kinds of media, such as magazines in teaching learning activity to improve students' interest in reading.

1.6 Limitation of the Study

This study limited to know whether teaching reading comprehension using “Hello” magazines could develop the students reading comprehension ability to Senior High School students.

1.7 Hypothesis

(H₁) Science articles in magazines give positive contribution to develop the students’ ability in reading comprehension.

(H₀) Science articles in magazines give negative contribution to develop the student’s ability in reading comprehension.

1.8 Outline of the Report

This final project is divided into five chapters, which can be elaborated as follows: Chapter one is introduction, which contains the background of the study, reasons for choosing the topic, statement of the problem, objective of the study, significance of the study, limitation of the study, hypothesis, and outline of the thesis.

Chapter two presents review of the related literature which discusses general concept of reading, reading comprehension, reading purpose, general concept of magazines, history of magazines, the purposes of science articles, the use of articles of magazines in teaching reading, and action research.

Chapter three deals with the methods of investigation, which discusses population, sample, variable, the method of collecting data, instrument, trying out of instrument, step in action research, and the method of data analysis.

Chapter four presents interpretation of the result of the study that discusses the analysis of the activities conducted in this study and the discussion of the research findings.

Chapter five gives summary of the study, some conclusions and suggestions made on the basis of the study.

CHAPTER II

REVIEW OF RELATED LITERATURE

This chapter discusses about the analysis review of related literature. It would be started from the analysis of general concept of reading, the analysis of reading purpose, the analysis of reading comprehension, the analysis of reading purpose, the analysis of teaching reading, the analysis of reading comprehension, the analysis of strategies for reading comprehension, the analysis of general concept of magazines, the analysis of the story of magazines, the analysis of types of magazines, the analysis of the purpose of magazines, the analysis of magazines articles, the analysis of the use of science articles in reading comprehension.

2.1 READING

This section discussed about Reading in general and entirely related to Reading , includes general concept of reading, reading purpose, teaching reading, types of reading, reading comprehension, and strategies of reading comprehension.

2.1.1 General Concept of Reading

Reading is one of the four language skills that have to be mastered. It has the greatest use at the end of the language study. Reading is a means of [language acquisition](#), of communication, and of sharing [information](#) in a text to internally active information and ideas. Thus, reading is not information processing but rather

information interpreting, what we understand from a text depends in part on what we knew previously.

There are so many definitions of reading from some experts. According to Beatrice & Jeffries (1996: vi), reading is one important way to improve the general language skills in English. Alderson (2000:28) defines reading as "...an enjoyable, intense, private activity, from which much pleasure can be derived, and in which one can become totally absorb. Reading means different things to different people, for some it is recognizing written words, while for others it is an opportunity to teach pronunciation and practice speaking. Readers use a variety of reading strategies to assist with decoding (to translate symbols into sounds or visual representations of [speech](#)) and comprehension. Readers may use [morpheme](#), [semantics](#), and [syntax](#) and context clues to identify the meaning of unknown words. Readers integrate the words they have read into their existing framework of knowledge or schema ([schemata theory](#)).According to Tickou (1995: 189), reading is defined here as a process of looking at and understanding written language. On the other hand, Grabe and Stoller (2002: 9) defined reading as the ability to draw meaning from the printed page and interpret this information appropriately.

Other types of reading are not speech based [writing systems](#), such as music [notation](#) or [pictograms](#). The common link is the interpretation of [symbols](#) to extract the meaning from the visual notations. Reading text is now an important way for the general population in many societies to access information and make meaning.

There are some advantages of reading:

- 1) Reading helps students learn to think in English.
- 2) Reading can increase students' English vocabulary.
- 3) Reading can help students improve their writing.
- 4) Reading may be a good way to practice students' English if they live in a non-English speaking country.
- 5) Reading can help students prepare for studying English-speaking country.

Based on the definition above, it can be concluded that reading is not merely as a process of reading words by words of the printed page but it is also a collaboration of thinking process, recollection of the past experience, interaction. Reading is also typically an individual activity, although on occasion a person will read out loud for the benefit of other listeners.

2.1.2 Reading Purpose

Reading is a skill that must be developed. Students learn to read by reading. Their reading will tend to be affective when they have a purpose and a motivation to learn first. According to Carnine, Silbert, and Kmeenui (1990: 45), a reader's purpose determines the way in which he treats a passage and which a comprehension skills he uses. It is also pointed out that there are some different purposes for reading:

- 1) To be able to identify and remember a main idea. Identifying the main idea is important in reading. We can conclude an article based on it.

- 2) To be able to follow instruction to reach a goal. For example in a receipt of medicine, we must read the instruction of the receipt to get a goal to getting well.
- 3) To be able to explain the content of a passage to someone else. For example in the seminar, we have to explain the material to the audience so the night before the show we must read the material in order the audience can get the information.
- 4) To critique the logic or data presented in a passage. With reading we can know the data that presented in a passage such as administration data.
- 5) To edit a passage according to stylistic and organizational criteria. If we want to make the stylistic and organized, we must read the passage and edit it.
- 6) To study according to an assignment to test requirement. In the test we must read the assignment in order to get a good score.

Nuttal (1982: 3) said that we read because we want to get something from the writing: facts, ideas, enjoyment, even feelings or family community (from a letter), whatever it was, we wanted to get the message that I had expressed. Grabe and Stoller (2002: 13) stated that the purpose of reading are as follows:

- 1) Reading to search. It is used so often in reading tasks that is probably best seen as a type of reading ability. We scan the text for a specific piece of information or a specific word.
- 2) Reading to skim quickly. It is a common part of many reading tasks and a useful skill in its own right. It involves a combination of strategies for guessing where important information might be in the text.

- 3) Reading to learn from text. It typically occurs in academic and professional contexts in which a person needs to learn a considerable amount of information from a text. Reading to learn is usually carried out at a reading rate out at a reading rate somewhat slower than general reading comprehension.
- 4) Reading to integrate information. It requires additional decisions about the relative importance of complementary, mutually supporting or conflicting information and the likely restructuring of a rhetorical frame to accommodate information from multiple sources.
- 5) Reading to critique texts. A text maybe has many of errors in writing so with reading the text we can correct the mistakes.
- 6) Reading for general comprehension. It is the most basic purpose for reading, underlying and supporting most other purpose for reading, general reading comprehension is actually more complex than commonly assumed.

Reading means different things to different people, for some it is recognizing written words, while for others it is an opportunity to teach pronunciation and practice speaking. However reading always has a purpose. It is something that we do everyday, it is an integral part of our daily lives, taken very much for granted and generally assumed to be something that everyone can do. The reason for reading depends very much on the purpose for reading. Reading can have three main purposes, for survival, for learning or for pleasure. Reading for survival is considered to be in response to our environment, to find out information and can include street signs, advertising, and timetables. It depends

very much on the day-to-day needs of the reader and often involves an immediate response to a situation. In contrast reading for learning is considered to be the type of reading done in the classroom and is goal orientated. While reading for pleasure is something that does not have to be done.

2.1.3 Teaching Reading

Teaching is a circular activity done by teacher in a classroom. A teacher's job is bringing about transformation in learners. The teacher also should have the students see advantages of learning to read so they will be motivated to learn this skill. In this case, a teacher should make the students realize the value of reading and also help students comprehend to the text. The techniques are providing meaningful context by discussing in the classroom, motivating the students to learn words, using the message of the text as a point of departure rather than syntactic feature (<http://en.wikipedia.org/wiki/strategies-of-teaching-reading/>).

From the above statements we can say that a teacher should employ a good method to encourage the students to subject.

2.1.3 Types of Reading

Brown (2004:189) divides some reading types into:

- 1) Perceptive, involves attending to the components of larger stretches of discourse: letters, words, punctuation, and other grapheme symbols.
- 2) Selective, ascertains one's reading recognition of lexical, grammatical or discourse features of language within a very short stretch of language, certain

typical tasks are used: picture cued tasks, matching, true or false, multiple choice, etc.

- 3) Interactive, the focus on interactive tasks is to identify relevant features. It includes grammar, meaning, etc.
- 4) Extensive, that applies to a text more than a page. It use to two or three text.

2.1.4 Reading Comprehension

Comprehension is frequently mentioned in cognitive and educational psychology, as well as, of course, the pedagogical literature (Weir C.J. and Urquhart A.H. , 1998: 84). Nunan (1992: 20) said that comprehension is regarded as an active process of contracting mental representations of meanings by anticipating message contents. Reading comprehension is the process of understanding and constructing meaning from a piece of text. Reading with comprehension means understanding what has been read. When a reader reads a text or reading material, she/he must try to comprehend the material, which he reads. Reading comprehension also have some techniques:

- 1) Scanning is a *searching* that requires a reader to float over the material until he finds what he needs. It may involve looking for specific words/phrases, figures/percentages, names, dates of particular events or specific items in and index.
- 2) Skimming is a technique used to look for the 'gist' of what the author is saying without a lot of detail (Reading Skills for College Students, p. 147) Skimming gives readers the advantage of being able to predict the purpose of the passage,

the main topic, or message, and possibly some of the developing or supporting ideas.

- 3) Extensive reading, reading a longer text, usually for one's own pleasure. It is used to obtain a general understanding of a subject and includes reading longer texts for pleasure, as well as business books. It is use extensive reading skills to improve your general knowledge of business procedures.
- 4) Intensive reading, reading a short text, to extract specific information. It is used on shorter texts in order to extract specific information. It includes very close accurate reading for detail. It is use intensive reading skills to grasp the details of a specific situation.
- 5) According to Burn, Roe, and Ross (1984: 109), there are seven major types of questioned based on comprehension skill, which can be useful in guiding reading, they are (a) main idea, to ask students to identify the central theme of the selection, (b) detail, to ask for bits of information conveyed by the material, (c) vocabulary, to ask for the meaning of words used in the selection, (d) sequence, to require knowledge of events in their order of occurrence, (e) inference, to ask information that is implied but not directly stated the material, (f) evaluation, to ask for judgments about material, (g) creative response, to ask children to go beyond the material and create new ideas.

Based on explanation above, it could be stated that comprehension can be the part of communication between the reader and the author. The author must have the simple idea from his brain into the written form, and the reader read the printed words and concludes the idea.

2.1.5 Strategies for Reading Comprehension

There are some strategies in reading comprehension: (1) identify the purpose in reading, by doing this you know what you're looking for and can weed out potential distracting information, (2) use graphemic rules and patterns to aid in bottom-up decoding (especially for beginning level learners). Students need hints and explanations about certain English orthographic rules and peculiarities, (3) use efficient silent reading techniques for relatively rapid comprehension. We do not need to “pronounce” each word, try to visually perceive more than one word at a time pages of material, close the books, and tell what you learned, (4) scan the text for specific information, by looking for names or dates, to find a definition of a key concept, or to list a certain number of supporting detail, (5) guess when you aren't certain, such as, guess the meaning of a word, guess content message, etc (<http://en.wikipedia.org/wiki/strategies-of-reading-comprehension/>)

2.2 Magazines

This section discussed about Magazines in general and entirely related to Magazines, includes general concept of magazines, the story of magazines, the purpose of magazines, magazines articles, and the use of science articles in reading comprehension.

2.2.1 General Concept of Magazines

Magazines are one of media informations. It is generally published on a regular schedule, containing a variety of [articles](#), generally financed by [advertising](#), by a purchase price, by pre-paid magazines [subscriptions](#), or all three. Magazines can be

distributed through the [mail](#); through sales by [newstands](#), [bookstores](#) or other vendors; or through free distribution at selected pick up locations

Most magazines are available in the whole of the country in which they are published, although some are distributed only in specific regions or cities. Others are available internationally, often in different editions for each country or area of the world, varying to some degree in editorial and advertising content but not entirely dissimilar. (http://en.wikipedia.org/wiki/Magazine_firearms)

2.2.2 The Story of Magazines

[The Gentleman's Magazines](#), first published in [1731](#), in [London](#), is considered to have been the first general-interest magazines. [Edward Cave](#), who edited *The Gentleman's Magazines* under the pen name "Sylvanus Urban", was the first to use the term "magazines", on the analogy of a military storehouse of varied *materiel*, originally derived from the Arabic *makhazin* "storehouses"^[1]

The oldest consumer magazines still in print is [The Scots Magazines](#), which was first published in [1739](#), though multiple changes in ownership and gaps in publication totaling over 90 years weaken that claim. [Lloyd's List](#) was founded in Edward Lloyd's England coffee shop in [1734](#); it is still published as a daily business newspaper. (<http://en.wikipedia.org/wiki/Magazine>)

2.2.3 Types of Magazines

There are many kinds of magazines:

Audio-Video magazines, Academic journals, Architecture magazines, Art magazines, Automobile magazines, Boating magazines, British boys' magazines, Business magazines, Comic books, Computer magazines, Customer magazines, Fantasy fiction magazines, Health and fitness magazines, History magazines, Horror fiction magazines, Humor magazines, Literary magazines, Luxury magazines, Men's magazines, Music magazines, News magazines, Online magazines, Partworks, Political magazines, Pornographic magazines, Pulp magazines, Railroad magazines, Regional magazines, Religious magazines, Satirical magazines, Science fiction magazines, Science magazines and scientific journals, Serials, periodicals and journals, Shelter magazines (home design and decorating), Sports magazines, Student magazines, Teen magazines, Trade journals, Trade magazines, Travel magazines, Wildlife magazines, Women's magazines.

(<http://ezinearticles.com/?The-Various-Types-Of-Magazines&id=1033438>)

2.2.4 The Purpose of Magazines

The purposes of magazines in common are to entertain or to inform the reader about something, give more meaning to life. Purpose Magazines is the only inspirational and motivational publication geared toward (but not exclusive to) minority or multicultural communities. Purpose Magazines provides good news with Inspirational and Motivational articles to help us meet the challenges of living. What makes Purpose so unique is that it focuses on the positive and uplifting perspectives of people, issues, news, and information. Besides, in education,

magazines are used as media which have many articles that very useful in teaching a second language. (http://www.bukisa.com/articles/43755_the-benefits-of-reading).

2.2.5 Magazines Articles

Magazines articles is an articles published in a magazines [articles](#) - nonfictional prose forming an independent part of a publication [mag](#), [magazines](#) - a periodic publication containing pictures and stories and articless of interest to those who purchase it or subscribe to it; "it takes several years before a magazines starts to break even or make money". It is containing a collection of articless, stories, pictures, or other features (<http://www.magazinesubscriptions.ws/blog/kinds-of-magazine-articles-51/>).

2.2.6 The Use of Science Articles in Reading Comprehension

Magazines have many of articles such as entertainment, gossip, short story, biography of selebrity, science, etc. I used science articles to this research because it has advantage for students esspecially IPA students in order to increasing their knowledge about English and fluently in reading comprehension. Besides, science articles also gives the students knowledge about science that they have not learn before.

CHAPTER III

METHOD OF INVESTIGATION

This chapter consists of the analysis of method of investigation. It would be started from the analysis of action research, the analysis of population, the analysis of sample, the analysis of variable of the research, the analysis of the method of collecting data, the analysis of instrument, the analysis of trying out of instruments, the analysis of the step in action research, and the analysis of the method of data analysis.

3.1. Action Research

I conducted a kind of investigation namely action research to gathering the data needed for accomplishing this study. According to Wallace (2004: 4), action research is a process which is done by systematically collecting data on your everyday practice and analyzing it in order to come to a decision about what your future practice should be. Its different opinion from Nunan (1990: 66) that said action research is a tool which is particularly amenable to such an experimental, problem oriented approach. Action research has several characteristics, which are:

- 1) Practical and directly relevant to an actual situation in the working world. The subjects are the classroom students, the staff, or other with whom you are primarily involved.

- 2) Provides an orderly framework for problem-solving and new developments that is superior to the impressionistic, fragmentary approach that otherwise typifies developments in education.
- 3) Flexible and adaptive, allowing changes during the trial period and sacrificing control in favor of responsiveness and on-the-spot experimentation and innovation.
- 4) While attempting to be systematic, action research lacks scientific rigor because its internal and external validity is weak.

Action research conducted of five cycles. They are as follows:

1) Preliminary Reflection

A preliminary reflection observation and a pre-test show that the students seem to have some problems in understanding a story or a text when reading, because they have a limited vocabulary in English.

2) Designing Planned Actions

A follow-up activity from the preliminary reflection is finding solution to the problem which has been identified. The activities that planned in classroom action research are 1). Identifying the problem that the students have, 2). Planning the articles of magazines that appropriate in the teaching material, 3). Making a lesson plan based on the teaching materials, 4). Preparing questionnaires to know the students' response during the activity.

3) Implementation of the Actions

The planned actions in the step above are implemented into teaching of reading comprehension by using articles of magazines in the class. The exercise is given to the students individually; in order to know understanding to the articles.

4) Observation

Observation is used to collect data on the changed behavior as a result of the exercise given during the research.

5) Assessment and Reflection

The data collected through observation are analyzed to find out the improvement achieved by the students. Test is conducted to know how well the students comprehend the science articles and the questionnaires are used to get information on how students are involved in the activities.

3.2 Population

According to Arikunto (1998: 115), a population is a set (or collection) of all elements possessing one or more attributes of interest. The population that was to conduct the experiment in this study was the eleventh grade students of SMA N 1 Grobogan in the academic year of 2010/2011. The total number of the students in the population was 172 students.

Each class has the same number of students that is approximately 40 students. All of second year students, especially IPA's students, were given the same English material and treatment from the teacher. Each of students as the member of the population has equal chance of being included in the sample.

3.3 Sample

Sample is a small proportion of a population selected for observation and analysis. Arikunto (1998: 118) said that a sample is a part or the representative of population

that is investigated. I only took 53.33% of the population that was 100 persons. I will divide the students into two groups. The first group was taken as the sample of the research and the second as the try-out group in developing in instrument of the research. According to Saleh (2001: 34), “Actually the final purpose of a research is to investigate population.” There are several techniques in taking sample. They are simple random sampling, systematic random sampling, and cluster random sampling. The technique to take the sample used by I is cluster random sampling. The reason in using this kind of sampling was that I have to control over all subject. “The number of population is too big, to be investigated. So a researcher can take 10-15% or 20-25% of the population as the sample” (Arikunto, 1998: 120). It has been mentioned before that there are four classes of the eleventh grade students, and the total number of the population is 172 students. Therefore, I took 40 students as the samples; it was based on the consideration that I took the subjects for about 23,56 % from the total number of the population.

3.4 Variable of the Research

Variable is the object of the experiment or the focus on an experiment (Arikunto, 1998: 91). According to Christensen (2001: 40), any characteristic of an organism, environment or experimental situation that can vary from one organism to another, from one environment to another and from one experimental situation to another. There are two types of variables used in this research.

- 1) Dependent variable is the variable of focus or the central variable on which other variables will act if there is any relationship.

- 2) Independent variable is selected by a researcher to determine the relationship with the dependent variable.

3.5 The Method of Collecting Data

In this study, the data were collected using questionnaires and reading comprehension test. The questionnaires were given at the end of the cycles to know how much effect has resulted on the students from the action research activities.

3.6 Instrument

This action research used five instruments:

3.6.1 Science Articles

I chose some appropriate science articles from *Hello magazine* as a media in teaching reading comprehension. They contain the article that has information about science. I also used the science articles in testing, in the treatment and post-test.

3.6.2 Tests

This action research was carried out through five activities. The three activities were pre test and post test. The reason to give assessment test to the students was to measure the students' progress in every step during the classroom research. Meanwhile, the first activity was devoted to a pre-test, and the fifth activity was devoted to a post-test. The test could be seen in appendix 21, 22, 23, 24, and 25.

In this study, I used one test type that is a multiple-choice completion. The advantages of the type of this test are:

- 1) It was efficient because the number of items can be answered in a short period time.
- 2) It was practical for the students to answer. They just choose one of the appropriate answers and write it on the answer sheet

3.6.3 Answer Sheet

Doing pre test and post test, the students given answer sheets. They wrote their answer on it. I made the answer sheet with line spacing was bigger. The purpose was to make it easy to correct their answer. The answer sheet could be seen in appendix 26, 27, 28 and 29.

3.6.4 Questionnaire

Questionnaire is a number of within questions, which are used to gain information from respondents about the respondents themselves, or their knowledge, beliefs, etc.

In this study, I used closed questionnaire to measure the students' achievement in reading comprehension. The questionnaire was written in Indonesia in order to make the students easy to answer. It consisted of 10 items related to the student's achievement and the effectiveness of science articles to improve reading comprehension. Two scale "Yes" and "No" follows each item. The questionnaire is scored by summing up the value 1 point for agreement and 0 for disagreement.

There were some steps in the data collection. First, data were collected from the first test or pre-test. Second, data were taken from the test in which the actions are conducted. Third, data were obtained from the post-test. Fourth, the post action questionnaire was useful to support the primary data in this research. Before the questionnaire was used as the instrument to collect data, it had been tried out to know its validity and reliability. The questionnaires could be seen in appendix 30.

3.7 Trying Out of Instruments

Before being implemented, the instruments to be tried out were the reading comprehension test items. The test consisted of 8 science articles, each articles contained 5-7 questions and the totaling 40 test items together. The students had to finish the test in 60 minutes. The test could be seen in appendix 20.

After that, the test should be examined to check their validity, reliability, the discriminating power and the level of difficulty. According to Arikunto (1998: 161) those steps are taken to obtain an instrument with logic validity, which means that the instrument is the result of a very careful effort on the part of the research in order to acquire validity.

3.7.1 Validity

Validity of the test is the extent to which it measures what it supposed to measure and nothing else (Heaton, 1974: 80). A test should be as valid as the constructor can make it. The test must aim to provide a true measure of particular skills, which

it is intended to measure. To fulfill the first requirement, each item of the test in the instrument was tested using Product Moment Formula:

$$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{(N \sum X^2) - (\sum X)^2\} \{(N \sum Y^2) - (\sum Y)^2\}}}$$

Where:

r_{xy} = coefficient of correlation between x and y variable or validity of each item.

N = number of students/subject participating in the test.

$\sum X$ = the sum of score in each item.

$\sum X^2$ = the sum of the square score in each item.

$\sum Y$ = the sum of the score from each student.

$\sum Y^2$ = the sum of the square score of each item.

$\sum XY$ = the sum of multiple of score from each students with the total score in each item.

(Arikunto, 2002:146)

Arikunto (1998: 75) said that an instrument with the coefficient correlation 0.400 to 0.600 is classified as a good with high validity. For $\alpha = 5\%$, and the number of subject 40, $r_{table} = 0,312$. When $r_{xy} > r_{table}$, the items are considered as validity item.

3.7.2 Reliability

A question is said to be reliable when approximately the same results are obtained on different occasions. To calculate the reliability, the test in the instrument was

$$R_{11} = \frac{2xr_{xy}}{1 + r_{xy}}$$

In which =

r_{11} : Reliability index

r_{xy} : correlation of odd even value

The critical value for $N = 40$ are 0,312. The coefficient of the correlation is higher than the critical value for t Product Formula, $r_{xy} > r_{table}$. It means that the instrument was reliable.

3.7.3 Level of Difficulty

Difficulty level or item facility, according to Brown is the extension to which an item is easy or difficult for the intended group of test-takers. To calculate the reliability, the test in the instrument was tested using the formula as follows:

$$DL = \frac{B}{JS}$$

DL: item of difficulty level

B : number of students who answer the item correctly

JS: number of students

$0 < P < 0,3$ is difficult

$0.3 < P < 0,07$ is medium

$0,7 < P < 1$ is easy

Based on the result obtain, the items of reading comprehension test were considered easy, number 1, 4, 6, 9, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 31, 32, 33, 34, 36, 37, 39. The reading comprehension test were considered medium are 12 items, they are 2, 3, 5, 7, 8, 10, 16, 29, 30, 35, 38, 40 and no one item were considered difficult.

3.7.4 Discriminating Power

The discriminating power is used to measure how well the test items arranged to identify the differences in the students' competence. The formula is:

$$DL = \frac{Ba}{Ja} - \frac{Bb}{Jb}$$

In which, Ba: number of students in the upper group who answer the item correctly

Bb: number of students in the lower group who answer the item correctly

Ja: number of all students in the upper group

Jb: number of all students in the lower group

Criteria: $D < 0,1$ is poor

$0,1 < D < 0,5$ is good

$0,5 < D < 1$ is very good

The result of the discrimination power of the test was considered very good are number 28, 38, 30. The medium or good items were number 1,2, 3,4, 5, 6, 7, 8, 9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,29,30,31,32,33,34,35,36, 37,39,40 and no one item were considered difficult.

3.8 The Step in Action Research

This action research was carried out through five cycles. The second, third and fourth cycles were teaching learning process. The first cycle was the pre-test and the fifth cycle was the post-test.

3.8.1 Pre Test

First, the students were given a pre test. They did the pre test individually. They had to do some exercises based on the texts without using science articles as media. They also had to write their answers on the answer sheets provided from them.

3.8.2 First Cycle

In the first cycle, I started a student's-learning process. I introduced science article to the students. The procedures of teaching and learning process were as follows: I gave science articles to the students, and then I read and explained about the articles. After that, I explained the kind of articles including science article. I helped the students to enrich their vocabulary and for the last, asked the students to do some exercises.

3.8.3 Second Cycle

In the second cycle, I explained about the grammar to the students and gave them examples of present tense from the science articles. After that, they were asked to read the science articles and do some assignments based on it.

3.8.4 Review

In this review, I also took several minutes to review the previous lesson before doing the teaching learning activity. I asked the students to do some exercises by using the science articles. They read the articles before doing the exercises. The procedures of the learning activity and that test were similar to those of the second cycle.

3.8.5 Post Test

In this step, the students did the post test. The students were asked to do the exercises. It was almost similar to the pre-test; however in this post-test they used science articles as media. The procedures and instruction of the test were similar as the pre-test and the exercises at the previous meeting. After finishing the tests, the students had to answer some questions in the questionnaires.

3.9 The Method of Data Analysis

The result of the test was analyzed by means of statistical analysis. The description analysis was used to process the data of the study, and the sample to establish valuable and meaningful information on which further analysis and interpretation could be based.

3.9.1 Mean

Mean is the most frequently used measure of central tendency in test statistics (Harris, 1969: 137). It is represented by the symbol M . All the scores of the

students were, summed up, and then the number of the students divided the result.

The formula:

$$M = \sqrt{\frac{\sum X}{N}}$$

Where, X = subject of the study

N = a number of subject

3.9.2 Significant Difference between Two Means

To test the hypothesis, I applied t-test formula by putting the data into the t-test formula, as follows:

$$t = \frac{MD}{\sqrt{\frac{\sum d^2}{N(N-1)}}}$$

(Hadi, 2004: 478)

df = N-1

Note, t : t-value for non independent mean

MD: mean differences

d: sum of pre-test and post-test differences

N: number of sample

CHAPTER IV

DATA ANALYSIS

In chapter four, the analysis will started with analysis of the pre test, analysis of the first cycle, analysis of the second cycle, analysis of the third cycle, analysis of post test and analysis of questionnaires. The advantages and disadvantages will be discussed.

4.1 Analysis of the Try Out Test

The try out was conducted before. It was used as an instrument. There were 40 items and followed 40 students. The purpose of the test was to measure the validity and reliability of the test.

$$\begin{aligned} \text{The average of the students result} &= \frac{\text{The total of the precentage}}{\text{The number of the students}} \\ &= \frac{2970}{40} \\ &= 74.25\% \end{aligned}$$

The result average of the students' was higher than the Department of Education and Culture's assessment on the previous criterion. It said that a student can be successful if he/she achieves 65 % of the material and a class can be said to have mastered in learning if they can achieve 85 % of the material presented. For details see appendix 1-7.

4.2 Analysis of the Pre Test

A pre test was conducted at the beginning of the research. The purpose of this test was to check the students' ability in mastering English reading comprehension material whether the students understand or not about the articles that would be presented in this pre-test. The pre test was conducted on Thursday, August 12 2010.

There were 40 students who followed this test. They had to answer 30 questions multiple-choice items and I gave one score of each items.

The result of the test could be seen in appendix 8 and appendix 9 for the analysis.

$$\begin{aligned}
 \text{The average of the students result} &= \frac{\text{The total of the precentage}}{\text{The number of the students}} \\
 &= \frac{2666.67}{40} \\
 &= 66.67\%
 \end{aligned}$$

The average of the students' result was 66.67% higher with Department of Education and Culture's criterion of the assessment in the previous chapter. I found there were some students were not familiar with the words that presented in the action research. The students also did not know about how to read the text quickly so they spent a lot of time to read the text besides the time was limit. The treatments in the next activities were important to improve the students' result.

4.3 Analysis of the First Cycle

The first cycle was conducted on Saturday, August 14, 2010. There were 40 students who followed the teaching learning process. The duration was about 30

minutes. I gave a science article taken from “Hello” magazine No.265, 2008: page 10-11 and the title were “Don’t even try it: Electric Chair”. Before explaining the material, I asked the students to read the article. While the text being read, I asked the students to find the difficult words from the text. After that I explained about the kinds of magazines and discussed the difficult words together.

The assessment tests were given in the end of the activity. There were 10 questions and the students had to answer the correct one based on the text for about 30 minutes. After that they submitted the tests, and then we discussed the answer together. The result of the second activity can be seen in appendix 10 and appendix 11.

$$\begin{aligned}
 \text{The average of the students result} &= \frac{\text{The total of the precentage}}{\text{The number of the students}} \\
 &= \frac{3160}{40} \\
 &= 79\%
 \end{aligned}$$

The average of the achievement for the second activity was 79%. Based on the evaluation, there were some students made mistakes with the meaning of the words because they did not know yet about the material and its difficult enough to them.

4.4 Analysis of the Second Cycle

The second cycle was conducted on Monday, August 16, 2010. It was followed by 40 students. In this activity, I explained about the grammar that used in science articles. There were several students gave some questions about the material. After

that, I gave a science articles taken from: “Hello” magazine No.265, 2008: page 10-11. Then, I asked to write the difficult words that they found in the text. I explained the words and added some new vocabularies.

I also asked the students to pronounce the words from the science articles. There were many mistakes that students did so I gave the correct pronunciation and asked the students to repeat. For the assessment I gave 10 questions. It took about 25 minutes to do it.

In the third activity, the result was better than the previous activity. But, there were still some students had some difficulties in memorizing and guessing the main idea and the meaning of the words. Based on this problem, I would review those difficult words given in the next meeting.

$$\begin{aligned}
 \text{The average of the students result} &= \frac{\text{The total of the precentage}}{\text{The number of the students}} \\
 &= \frac{3250}{40} \\
 &= 81.25\%
 \end{aligned}$$

The average achievement of the students was 81.25%. It was clear that the result was higher than before. Based on the evaluation, there were some students made mistakes with the meaning of the words but they got advance in learning reading. The result can be seen in appendix 12 and appendix 13.

4.5 Analysis of the Third Cycle

The third cycle was conducted on Wednesday, August 21, 2010. It was followed by 40 students. I made a time for 10 minutes to review the previous lesson in order to reinforces the word in their mind. In this activity I gave a science articles taken

from “Hello” magazine No.265, 2008: page 20-21. Then, I asked to read and write the difficult words that they found in the text. I explained the words and added some new vocabularies.

For the assessment I gave 10 questions. It took about 15 minutes to do it. The result of the third cycle can be seen in appendix 14 and 15.

$$\begin{aligned}
 \text{The average of the students result} &= \frac{\text{The total of the precentage}}{\text{The number of the students}} \\
 &= \frac{3460}{40} \\
 &= 86.5\%
 \end{aligned}$$

The average achievement of the students was 86.5%. It was clear that the result was higher than before. I compared the result of this test with the previous test. It was clear that the result activity was high than before. So I did not give the amended plan.

4.6 Analysis of Post Test

After the post test were done, the student’s achievement in learning reading comprehension using science articles was evaluated by giving a post test. I conducted the post-test on Wednesday, August 21, 2010. Before giving the post-test, I reviewed again all the material by asking some questions to the student’s. It took 10 minutes.

In the post test, the student had to answer 30 multiple-choice items that was similar as the pre-test. The students who finished the post test would get a

questionnaires sheet. The result of the post-test could be seen in the appendix 10 and 11.

$$\begin{aligned}
 \text{The average of the students result} &= \frac{\text{The total of the precentage}}{\text{The number of the students}} \\
 &= \frac{3499.7}{40} \\
 &= 87.49 \%
 \end{aligned}$$

The average achievement of the students was 87.49 %. It was clear that the result was higher than pre-test and the treatment. It means that the treatment that given to the students was successful. The result can be seen in appendix 16 and 17.

4.7 Analysis of the Questionnaires

As in the previous chapter, in this activity I gave questionnaires to the students. The purpose of giving questionnaires is to answer the problem of the study. I gave 10 items to be answered. I conducted the post-test on Wednesday, August 21, 2010 and it took 10 minutes. The result can be seen in appendix 19.

4.8 Concluding the Questionnaires Result

I used Yes or No questions in Bahasa Indonesia in order to make students easily to answer. Students could answer the questions quickly and did not waste of time because limited of time.

Based on the questionnaires that I gave, I could conclude that:

- 1) Students were very interested in English especially reading because it can improve their reading comprehension and can increase their new vocabulary.
- 2) Students were interested to find articles in English based on their interest. They could find the meaning of the sentence in the articles because they could increase their knowledge about any information that they found in the articles.
- 3) There were some students that did not like to bring the dictionary in English lesson and lazy to find the meaning of the words. Therefore, the teacher should give encouragement to the students in order they were attracted to bring the dictionary to find the meaning in each words.
- 4) In teaching learning process, the students agreed if their teacher gave the tasks because they could learn more about the material. It made the teaching learning process successful.
- 5) The program was very necessary for the students.

The result of the second activity can be seen in appendix 18.

4.9 The Advantages and Disadvantages of Using Science Articles in “Hello” Magazines

Based on the observation, tests and questionnaires, I could conclude that the advantages and disadvantages of using science articles in “Hello” magazines in improving students’ reading comprehension at Senior High School especially for IPA students.

4.9.1 The Advantages of Using Science Articles in “Hello” Magazines are:

- 1) The students are motivated to be more interested in reading material because they can
- 2) The material can enlarge the students’ knowledge and helped them to improve their understanding of the reading material.
- 3) Science articles also help students to know new vocabulary.

4.9.2 The Disadvantages of Using Science Articles in “Hello” Magazines are:

- 1) The teacher needs time and energy to find suitable science articles for students.
- 2) Science articles in “Hello” magazines must be provided more as reading material for students so that will need much money to buy them.
- 3) “Hello” magazines are difficult to find because it made only once a month.
- 4) Occasionally, the words in science articles are difficult so the students must find it in their dictionary.

CHAPTER V

CONCLUSION AND SUGGESTION

In the fifth chapter, I would discuss about conclusion and suggestion.

5.1 Conclusion

Based on the result of the analysis in the previous chapter, I can conclude that an increase in the students' achievement had happened after they got some treatments. It was proven by the comparison between the result of the pre-test and the post-test in which the post-test (66.96%) was higher than pre-test (66.67%). It showed that the use of science articles in "Hello" magazines could improve the students' reading comprehension. The main factor affecting this successful was the students' interest in reading science articles. The interest of them in reading science articles improved because they gave good achievement of the study that these all had been discussed in this study. Despite of they sometimes find new vocabulary, it will motivate them to find the meaning of the words because they did not find them before. These kinds of activity were very necessary for the students and they expect that the program to be regularly and continuously given to increase their knowledge in English reading material.

5.2 Suggestion

There are some suggestions for the readers and the English teacher. The suggestions are:

- 1) For students: Science articles as a material of teaching process is one of good ways for the students improving English reading comprehension because it is a kinds of exposition text that make the students interest in reading. Therefore, students should more interest in learning English especially reading because reading gives us a lot of knowledge and information of the world.
- 2) For English teachers: The teacher should more creative in getting the material source so that the students can learn English successfully.
- 3) For next researchers: I hope that there will be many researches about how to use the science articles effectively in the future by using another magazines or newspapers and it will increase a lot of opinion for all the researches.

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Appendix 9

The Result of the First Activity (Pre-Test)

No	Students Code	The Right Score	The Right Mastered in %
1.	A – 01	32	80
2.	A – 02	30	75
3.	A – 03	27	67.5
4.	A – 04	27	67.5
5.	A – 05	27	67.5
6.	A – 06	25	62.5
7.	A – 07	25	62.5
8.	A – 08	24	60
9.	A – 09	26	65
10.	A – 10	29	72.5
11.	A – 11	30	75
12.	A – 12	25	62.5
13.	A – 13	28	70
14.	A – 14	29	72.5
15.	A – 15	27	67.5
16.	A – 16	30	75
17.	A – 17	28	70
18.	A – 18	26	65
19.	A – 19	31	77.5
20.	A – 20	28	70
21.	A – 21	26	65
22.	A – 22	24	60
23.	A – 23	25	62.5
24.	A – 24	30	75
25.	A – 25	25	62.5
26.	A – 26	29	72.5
27.	A – 27	26	65
28.	A – 28	29	72.5
29.	A – 29	29	72.5
30.	A – 30	26	65
31.	A – 31	28	70
32.	A – 32	27	67.5
33.	A – 33	25	62.5
34.	A – 34	28	70
35.	A – 35	29	72.5
36.	A – 36	25	62.5
37.	A – 37	30	75
38.	A – 38	22	55
39.	A – 49	27	67.5
40.	A – 40	29	72.5
	$\Sigma= 40$	$\Sigma= 1095$	$\Sigma= 2732.5$

Appendix 10**The Result of the Second Activity**

No	Students Code	The Right Score	The Right Mastered in %
1.	A – 01	7	70
2.	A – 02	7	70
3.	A – 03	9	90
4.	A – 04	6	60
5.	A – 05	8	80
6.	A – 06	9	90
7.	A – 07	8	80
8.	A – 08	7	70
9.	A – 09	7	70
10.	A – 10	8	80
11.	A – 11	8	80
12.	A – 12	9	90
13.	A – 13	9	90
14.	A – 14	5	50
15.	A – 15	4	40
16.	A – 16	8	80
17.	A – 17	8	80
18.	A – 18	9	90
19.	A – 19	9	90
20.	A – 20	9	90
21.	A – 21	8	80
22.	A – 22	9	90
23.	A – 23	7	70
24.	A – 24	8	80
25.	A – 25	9	90
26.	A – 26	9	90
27.	A – 27	9	90
28.	A – 28	8	80
29.	A – 29	7	70
30.	A – 30	9	90
31.	A – 31	9	90
32.	A – 32	9	90
33.	A – 33	9	90
34.	A – 34	7	70
35.	A – 35	9	90
36.	A – 36	6	60
37.	A – 37	6	60
38.	A – 38	7	70
39.	A – 39	8	80
40.	A – 40	9	90

	$\Sigma = 40$	$\Sigma = 316$	$\Sigma = 3160$
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Appendix 11

The Score Analysis of the Second Activity

No.	Students Code	Score Per Item										Total Score
		1	2	3	4	5	6	7	8	9	10	
1.	A – 01	1	1	1	1	1	0	1	0	0	1	7
2.	A – 02	1	1	1	1	1	0	0	0	1	1	7
3.	A – 03	1	1	1	1	1	0	1	1	1	1	9
4.	A – 04	1	1	0	1	1	0	0	1	0	1	6
5.	A – 05	1	1	1	1	1	0	1	0	1	1	8
6.	A – 06	1	1	1	1	1	0	1	1	1	1	9
7.	A – 07	1	1	1	1	1	0	1	0	1	1	8
8.	A – 08	1	1	1	0	1	0	1	0	1	1	7
9.	A – 09	1	1	1	0	1	0	1	0	1	1	7
10.	A – 10	1	1	1	1	1	0	1	0	1	1	8
11.	A – 11	1	1	1	1	1	0	1	0	1	1	8
12.	A – 12	1	1	1	1	1	0	1	1	1	1	9
13.	A – 13	1	1	1	1	1	0	1	1	1	1	9
14.	A – 14	1	1	1	0	1	0	1	0	0	0	5
15.	A – 15	1	1	1	0	0	0	1	0	0	0	4
16.	A – 16	1	1	1	1	1	0	1	0	1	1	8
17.	A – 17	1	1	1	1	1	0	1	0	1	1	8
18.	A – 18	1	1	1	1	1	0	1	1	1	1	9
19.	A – 19	1	1	1	1	1	0	1	1	1	1	9
20.	A – 20	1	1	1	1	1	0	1	1	1	1	9
21.	A – 21	1	1	1	1	1	0	1	0	1	1	8
22.	A – 22	1	1	1	1	1	0	1	1	1	1	9
23.	A – 23	1	0	1	1	1	0	1	0	1	1	7
24.	A – 24	1	1	1	1	1	0	1	0	1	1	8
25.	A – 25	1	1	1	1	1	0	1	1	1	1	9
26.	A – 26	1	1	1	1	1	0	1	1	1	1	9
27.	A – 27	1	1	1	1	1	0	1	1	1	1	9
28.	A – 28	1	1	1	1	1	1	1	0	1	1	8
29.	A – 29	1	1	1	0	1	0	1	0	1	1	7
30.	A – 30	1	1	1	1	1	0	1	1	1	1	9
31.	A – 31	1	1	1	1	1	0	1	1	1	1	9
32.	A – 32	1	1	1	1	1	0	1	1	1	1	9
33.	A – 33	1	1	1	1	1	0	1	1	1	1	9
34.	A – 34	1	0	1	1	1	0	1	0	1	1	7
35.	A – 35	1	1	1	1	1	0	1	1	1	1	9
36.	A – 36	1	1	1	0	1	0	1	1	0	0	6
37.	A – 37	1	1	1	1	0	0	1	1	0	0	6
38.	A – 38	1	1	1	1	1	0	1	0	0	1	7
39.	A – 39	1	1	1	1	1	0	1	0	1	1	8

40.	A – 40	1	1	1	1	1	0	1	1	1	1	9
	$\Sigma= 40$	40	38	39	34	38	1	38	20	33	36	316

Appendix 12

The Result of the Third Activity

No	Students Code	The Right Score	The Right Mastered in %
1.	A – 01	8	80
2.	A – 02	8	80
3.	A – 03	8	80
4.	A – 04	10	100
5.	A – 05	8	80
6.	A – 06	6	60
7.	A – 07	8	80
8.	A – 08	8	80
9.	A – 09	8	80
10.	A – 10	8	80
11.	A – 11	8	80
12.	A – 12	6	60
13.	A – 13	8	80
14.	A – 14	8	80
15.	A – 15	8	80
16.	A – 16	6	60
17.	A – 17	7	70
18.	A – 18	9	90
19.	A – 19	9	90
20.	A – 20	8	80
21.	A – 21	7	70
22.	A – 22	9	90
23.	A – 23	8	80
24.	A – 24	8	80
25.	A – 25	8	80
26.	A – 26	8	80
27.	A – 27	8	80
28.	A – 28	8	80
29.	A – 29	8	80
30.	A – 30	9	90
31.	A – 31	8	80
32.	A – 32	8	80
33.	A – 33	9	90
34.	A – 34	8	80
35.	A – 35	10	100

36.	A – 36	1	1	1	0	1	1	1	1	0	0	8
37.	A – 37	1	1	1	1	1	1	1	1	1	1	10
38.	A – 38	1	1	1	1	1	1	1	1	1	1	10
39.	A – 39	1	1	1	1	1	1	0	1	0	1	8
40.	A – 40	1	1	1	1	1	1	0	1	0	1	8
	$\Sigma= 40$	41	36	42	40	43	42	28	35	30	42	325

Appendix 14

The Result of the Fourth Activity

No	Students Code	The Right Score	The Right Mastered in %
1.	A – 01	10	100
2.	A – 02	10	100
3.	A – 03	8	80
4.	A – 04	10	100
5.	A – 05	10	100
6.	A – 06	10	100
7.	A – 07	9	90
8.	A – 08	9	90
9.	A – 09	7	70
10.	A – 10	9	90
11.	A – 11	10	100
12.	A – 12	10	100
13.	A – 13	10	100
14.	A – 14	10	100
15.	A – 15	8	80
16.	A – 16	9	90
17.	A – 17	9	90
18.	A – 18	8	80
19.	A – 19	7	70
20.	A – 20	9	90
21.	A – 21	10	100
22.	A – 22	8	80
23.	A – 23	9	90
24.	A – 24	8	80
25.	A – 25	8	80
26.	A – 26	10	100
27.	A – 27	6	60
28.	A – 28	9	90
29.	A – 29	10	100
30.	A – 30	8	80
31.	A – 31	9	90
32.	A – 32	9	90
33.	A – 33	10	90

36.	A – 36	1	1	1	1	1	1	1	1	1	1	10
37.	A – 37	1	1	1	1	1	1	1	1	1	1	10
38.	A – 38	1	1	1	1	1	1	1	1	0	1	9
39.	A – 39	1	1	1	1	1	1	1	0	1	1	9
40.	A – 40	1	1	1	1	1	1	1	0	0	1	8
	$\Sigma = 40$	41	40	41	42	44	46	38	37	38	49	361

Appendix 17

The Result of the Fifth Activity (Post-Test)

No	Students Code	The Right Score	The Right Mastered in %
41.	A – 01	33	82.5
42.	A – 02	33	82.5
43.	A – 03	31	77.5
44.	A – 04	33	82.5
45.	A – 05	29	72.5
46.	A – 06	25	62.5
47.	A – 07	27	67.5
48.	A – 08	26	65
49.	A – 09	25	62.5
50.	A – 10	31	77.5
51.	A – 11	31	77.5
52.	A – 12	31	77.5
53.	A – 13	32	80
54.	A – 14	32	80
55.	A – 15	26	65
56.	A – 16	32	80
57.	A – 17	26	65
58.	A – 18	29	72.5
59.	A – 19	28	70
60.	A – 20	32	80
61.	A – 21	25	62.5
62.	A – 22	34	85
63.	A – 23	27	67.5
64.	A – 24	25	62.5
65.	A – 25	28	70
66.	A – 26	30	75
67.	A – 27	27	67.5
68.	A – 28	29	72.5
69.	A – 29	32	80
70.	A – 30	26	65
71.	A – 31	26	65
72.	A – 32	30	75
73.	A – 33	26	65
74.	A – 34	25	62.5
75.	A – 35	29	72.5
76.	A – 36	24	60
77.	A – 37	32	80

78.	A – 38	22	55
79.	A – 49	29	72.5
80.	A – 40	30	75
	$\Sigma= 40$	$\Sigma= 1148$	$\Sigma= 2870$

Appendix 18

The Score Analysis of the Questionnaire

No.	Students Code	Score Per Item									
		1	2	3	4	5	6	7	8	9	10
1.	A – 01	Y	Y	Y	T	T	T	Y	Y	T	Y
2.	A – 02	Y	Y	T	T	Y	T	Y	Y	Y	Y
3.	A – 03	Y	Y	Y	T	Y	T	Y	T	Y	Y
4.	A – 04	Y	Y	Y	T	Y	Y	Y	T	Y	Y
5.	A – 05	Y	T	Y	Y	Y	Y	Y	T	Y	Y
6.	A – 06	T	Y	Y	T	T	T	Y	T	T	Y
7.	A – 07	Y	Y	Y	T	Y	-	Y	T	Y	Y
8.	A – 08	Y	Y	T	T	Y	T	Y	T	Y	Y
9.	A – 09	Y	Y	T	T	Y	T	Y	Y	Y	Y
10.	A – 10	Y	Y	Y	T	T	T	Y	T	Y	Y
11.	A – 11	Y	Y	Y	T	T	T	Y	T	T	Y
12.	A – 12	T	Y	T	T	Y	Y	T	T	T	Y
13.	A – 13	Y	Y	Y	T	Y	Y	Y	T	Y	Y
14.	A – 14	Y	Y	Y	T	T	T	Y	T	T	Y
15.	A – 15	Y	Y	T	T	Y	T	Y	Y	Y	Y
16.	A – 16	Y	Y	Y	T	T	T	T	T	Y	Y
17.	A – 17	Y	Y	Y	T	T	T	Y	T	Y	Y
18.	A – 18	Y	Y	T	T	Y	T	Y	Y	T	Y
19.	A – 19	Y	Y	Y	T	T	Y	T	Y	Y	Y
20.	A – 20	Y	Y	Y	T	T	Y	T	T	T	Y
21.	A – 21	Y	Y	Y	T	T	T	Y	T	T	Y
22.	A – 22	Y	Y	T	T	Y	T	Y	Y	T	Y
23.	A – 23	Y	Y	Y	T	T	T	Y	Y	Y	Y
24.	A – 24	Y	Y	Y	T	Y	T	Y	T	Y	Y
25.	A – 25	Y	Y	Y	T	T	Y	Y	T	Y	Y
26.	A – 26	Y	Y	Y	T	Y	Y	Y	T	Y	Y
27.	A – 27	Y	Y	T	T	T	T	Y	T	Y	Y
28.	A – 28	Y	Y	T	T	Y	T	Y	Y	T	Y
29.	A – 29	T	Y	Y	T	Y	Y	Y	T	Y	Y
30.	A – 30	Y	Y	Y	T	Y	Y	-	T	Y	Y
31.	A – 31	Y	Y	Y	T	Y	T	Y	T	Y	Y
32.	A – 32	T	Y	T	T	T	T	Y	T	T	Y
33.	A – 33	T	Y	Y	T	T	T	Y	T	Y	Y
34.	A – 34	Y	Y	Y	T	Y	T	Y	T	Y	Y
35.	A – 35	Y	Y	Y	T	T	T	Y	T	Y	Y

36.	A – 36	Y	Y	Y	T	Y	Y	Y	T	Y	Y
37.	A – 37	Y	Y	Y	T	T	T	T	T	Y	Y
38.	A – 38	Y	Y	T	T	Y	T	Y	Y	T	Y
39.	A – 39	Y	Y	T	T	Y	T	Y	Y	T	Y
40.	A – 40	Y	Y	Y	T	T	T	Y	T	Y	Y
	Ya	35	39	28	1	22	11	35	11	27	40
	Tidak	5	1	12	39	18	29	5	29	13	0

Appendix 19

The Percentages of the Students' Result

No.	Students Code	Total Score				
		Pre-Test	Activity 2	Activity 3	Activity 4	Post-Test
1.	A – 01	32	7	8	10	33
2.	A – 02	30	7	8	10	33
3.	A – 03	27	9	8	8	31
4.	A – 04	27	6	10	10	33
5.	A – 05	27	8	8	10	29
6.	A – 06	25	9	6	10	25
7.	A – 07	25	8	8	9	27
8.	A – 08	24	7	8	9	26
9.	A – 09	26	7	8	7	25
10.	A – 10	29	8	8	9	31
11.	A – 11	30	8	8	10	31
12.	A – 12	25	9	6	10	31
13.	A – 13	28	9	8	10	32
14.	A – 14	29	5	8	10	32
15.	A – 15	27	4	8	8	26
16.	A – 16	30	8	6	9	32
17.	A – 17	28	8	7	9	26
18.	A – 18	26	9	9	8	29
19.	A – 19	31	9	9	7	28
20.	A – 20	28	9	8	9	32
21.	A – 21	26	8	7	10	25
22.	A – 22	24	9	9	8	34
23.	A – 23	25	7	8	9	27
24.	A – 24	30	8	8	8	25
25.	A – 25	25	9	8	8	28
26.	A – 26	29	9	8	10	30
27.	A – 27	26	9	8	6	27
28.	A – 28	29	8	8	9	29
29.	A – 29	29	7	8	10	32
30.	A – 30	26	9	9	8	26
31.	A – 31	28	9	8	9	26
32.	A – 32	27	9	8	9	30

33.	A – 33	25	9	9	10	26
34.	A – 34	28	7	8	9	25
35.	A – 35	29	9	10	10	29
36.	A – 36	25	6	8	10	24
37.	A – 37	30	6	10	10	32
38.	A – 38	22	7	10	9	22
39.	A – 39	27	8	8	9	29
40.	A – 40	29	9	8	8	30
	$\Sigma=40$	1093	316	325	361	1148
	Percentage (%)	68.31	79	81.25	90.25	71.75

Appendix 20

TRY OUT TEST

Read the text and choose the correct answer for every question below.

Questions 1-7 are based on the following text.

Anesthesia, essentially a reversible condition induced by drugs, is intended to result in one or more different states of being. It can relieve pain, give you amnesia to knock out your memory of the procedure or how it felt, reduce anxiety (because who doesn't have anxiety when undergoing a medical procedure?) and paralyze your muscles.

It sounds a little scary, but anesthesia is made as safe as possible by careful calculation of the required dosages and diligent monitoring by medical professionals. And not all types of anesthesia are created equal.

When you think of anesthesia, it's likely you think of what's called general anesthesia, which is when you're completely unconscious during a medical procedure such as a major surgery. But there are several different types, and not all of them leave you oblivious to the world. Local anesthesia, for example, can affect just a small patch of skin. Which type you receive depends on a number of factors, including what kind of medical procedure you need and what your medical history looks like. There can also be some overlap between different types of anesthesia, and often, more than one drug is necessary to produce all the desired effects.

Procedural Sedation, the Twilight Sleep

You may have undergone procedural sedation and not realized that it even qualified as anesthesia. If you've had your wisdom teeth taken out, for example, you've probably had procedural sedation. This type of anesthesia is used for short, relatively minor medical procedure and is also known as conscious sedation or twilight anesthesia. In addition to dental work, procedural sedation is used for things like setting broken bones, LASIK and minor cosmetic surgeries.

Under procedural sedation, you remain fully awake and can respond to questions and instructions. That doesn't necessarily mean that you know what's going on, though – you'll be sleepy and relaxed. You typically won't remember the procedure or the short period of time following it. Some of the drugs used in procedural sedation can make you feel giddy or euphoric. (*Taken from: "Hello" magazine, No. 295 page 14-15, 2010*)

1. What is the main idea of the text above?
 - a. It sounds a little scary, but anesthesia is made as safe as possible
 - b. Anesthesia, essentially a reversible condition induced by drugs, is intended to result in one or more different states of being
 - c. Which type you receive depends on a number of factors
 - d. Local anesthesia, for example, can affect just a small patch of skin
 - e. Some of the drugs used in procedural sedation can make you feel giddy or euphoric
2. What is anesthesia?
 - a. Anesthesia is the one of disease
 - b. Anesthesia is very dangerous because it can make us amnesia
 - c. Anesthesia, essentially a reversible condition induced by drugs, is intended to result in one or more different states of being
 - d. Anesthesia has undergone procedural sedation
 - e. Anesthesia is used for short, relatively minor medical procedure and is also known as conscious sedation
3. What is the meaning of you in the text above?
 - a. The reader
 - b. The writer
 - c. Someone who consume drug
 - d. the doctor
 - e. the patient
4. The following is true about anesthesia, *except*....
 - a. Anesthesia give you amnesia to knock out your memory of the procedure or how it felt
 - b. But there are several different types, and not all of them leave you oblivious to the world
 - c. Some of the drugs used in procedural sedation can make you feel giddy or euphoric
 - d. Local anesthesia can't affect just a small patch of skin
 - e. More than one drug is necessary to produce all the desired effects
5. What does the word "this" in the fourth paragraph refers to?
 - a. procedural sedation
 - b. anesthesia
 - c. twilight anesthesia
 - d. drugs
 - e. broken bones
6. What is the synonym of "giddy" in the last paragraph?
 - a. feel
 - b. weak
 - c. powerful
 - d. beautiful
 - e. confused
7. What is the result of procedural sedation?
 - a. make giddy
 - b. feel happy
 - d. make worried
 - e. decrease the problem

- c. increase enthusiasm

Questions 8-12 are based on the following text.

What causes allergies?

To help answer this question, let's look at a common household example. A few months after the new cat arrives in the house, dad begins to have itchy eyes and episodes of sneezing. One of the three children develops coughing and wheezing, especially when the cat comes into her bedroom. The mom and the other two children experience no reaction whatsoever to the presence of the cat. How can we explain this?

The immune system is the body's organized defense mechanism against foreign invaders, particularly infections. Its job is to recognize and react to these foreign substances, which are called antigens. Antigens are substances that are capable of causing the production of antibodies. Antigens may or may not lead to an allergic reaction. Allergens are certain antigens that cause an allergic reaction and the production of IgE.

The aim of the immune system is to mobilize its forces at the site of invasion and destroy the enemy. One of the ways it does this is to create protective proteins called antibodies that are specifically targeted against particular foreign substance. These antibodies, or immunoglobulins (IgG, IgM, IgA, IgD), are protective and help destroy a foreign particle by attaching to its surface, thereby making it easier for other immune cells to destroy it. The allergic person however, develops a specify type of antibody called immunoglobulin E, or IgE, in response to certain normally harmless foreign substances, such as cat dander. To summarize, immunoglobulin are a group of protein molecules that act as antibodies. There are five different types; IgG, IgM, IgA, IgD, and IgE. IgE is the allergy antibody. *(Taken from: "Hello" magazine No. 295,2010: page 14-15)*

8. What is the title of the text above?
 - a. allergies
 - b. household
 - c. immune
 - d. antigens
 - e. allergens
9. What is the meaning of immune system?
 - a. substances that are capable of causing the production of antibodies
 - b. the body's organized defense mechanism against foreign invaders, particularly infections
 - c. the kinds of vitamins in our body
 - d. a group of protein molecules that act as antibodies
 - e. one of the ways it does this is to create protective proteins called antibodies that are specifically targeted against particular foreign substance

10. The following is true about the aim of the immune system that is...
- to mobilize its forces at the site of invasion and destroy the enemy
 - develops a specify type of antibody
 - cause an allergic reaction and the production
 - to make the body incentive from the disease
 - to help ingestion of our body
11. Which are the kinds of antibodies or immunoglobulin?
- IgB, IgM, IgC, IgD, IgE
 - IgA, IgC, IgD, IgE, IgN
 - IgG, IgM, IgA, IgD, IgE
 - IgG, IgE, IgM, IgB, IgD
 - IgK, IgM, IgE, IgP, IgD
12. Which antibodies that the function as allergy antibody?
- IgA
 - IgD
 - IgM
 - IgG
 - IgE

Questions 13-18 are based on the following text.

THE HISTORY OF TRAIN

At the end of 18th century, the steam engine became a real and positive factor in the industry, and different attempts had been made to apply it to the road vehicles. The merit to carry out the construction of the first locomotive that marched on the tracks corresponds to Richard Trevithick that, in February of 1804, used a locomobile machine to carry coal in the road of Penydaran, in South Wales United Kingdom.

The locomotive of Trevithick, according to the most authorized references, was very similar to the attached figure in this page. The boiler was made of strained iron with inner furnace, and the products of the combustion were directed to a chimney located in the same end of the mouth of the firebox. The steam engine, that is to say, the cylinder with the piston, was arrange vertically, and the connecting bars represented in the figure by D, that acted as a connecting rod, and the L connected with the motor axis.

The steam after having operated, escaped by the chimney to increase the shot, and this system is depended on the friction of the driving wheels on the tracks to assure sufficient traction power. The pressure of the steam was about 40 pounds by square inch; so that strictly speaking it was a machine of high pressure. The safety valve, E, prevented an excessive pressure in the boiler. This locomotive worked well, but its economic results were not satisfactory. (*Taken from: "Hello" magazine No.265,2008: page 30*)

13. When did the steam engine become a real and positive factor in the industry?
- 10th century
 - 19th century
 - 18th century
 - 20th century

- b. 18th century
c. 22nd century
- e. 12th century
14. Where did the coal carry?
a. South of Africa
b. New Zealand
c. South Wales
d. Australia
e. America
15. How the boiler was made of?
a. copper
b. gold
c. clay
d. sand
e. iron
16. ...and this system is depended on the friction of the driving wheels on the tracks...
The underline word in the last paragraph refers to...
a. locomotive
b. steam
c. chimney
d. iron
e. boiler
17. ...and different *attempts* had been made to apply it to the road vehicles. The synonym of word “attempt” is...
a. trial
b. carry
c. investigate
d. pressure
e. knock
18. The safety valve, E, prevented an excessive pressure in the boiler. The antonym of prevented is..
a. check
b. treatment
c. injection
d. forestall
e. support

Complete the following sentences using the words.

The following successful attempt to (19)....a steam locomotive was done by Blenkinsop in 1812. This machine, as it (20).... in the corresponding figure, had two cylinders of 203 millimeters of diameter each one and arrange vertically, like in the machine of Trevithick. The connecting bars, nevertheless, acted on axes with pinions that rotated a great dented wheel that matched as well in the edges of the rails of the track. The supporting (21)..... of the machine of Blenkinsop was followed, in 1813, by another denominated “Puffing Billy”, devised by Blackett, the almost completely agreed upon the same Blenkinsop’s system in the general structure of the vehicle, but that obtained the effect of traction by means of the supporting wheels, like in the (22)..... invented by Trevithick. (*Taken from: “Hello” magazine No.265,2008: page 31*)

19. a. obtain
b. bring
c. abandon
d. support
e. edit
20. a. make
b. connect
c. appears
d. find
e. change
21. a. iron
b. key
c. gold
d. chair
e. wheels
22. a. locomotive
b. vehicle
c. pedicab
d. transportation
e. train

Questions 23-27 are based on the following text.

Scientists suspect that bees and flowering plants both evolved around 100 million years ago, in the middle of Cretaceous period. Before this period, many plants reproduced the way today's conifers do. They released seeds and pollen using cones. The wind carried the cones, and eventually the pollen came into contact with the seeds and fertilizes them. During the Cretaceous period, some plants began to reproduce using flowers. Unlike conifers, these plants, called angiosperms, needed the help of insects had to physically move pollen grains from plants' anthers, or their male structures, to their stigmas, or female structures.

At about the same time, bees differentiated themselves from their wasp-like ancestors. Prehistoric wasps were carnivores that lay their eggs in the bodies of their prey. Bees became herbivores, eating pollen and nectar from the newly-evolved plants and pollinating flowers as they went. Fossil evidence supports this theory – the oldest known bee fossil is 100 million years old, and the preserved bee has several wasp-like features. This doesn't necessarily mean that bees and wasps both evolved from wasps. It's more likely that bees and wasps both evolved from a mutual, wasp-like ancestor.

Today, bees still have several physical features in common with their wasp cousins. They also share some traits with ants. Together, bees, wasps and ants make up the insect order Hymenoptera, which means "membranous wings." (Taken from: "Hello" magazine No.296,2010: page 18)

23. What is the title of the text above?
- a. Bee's body
b. Bee anatomy
c. Insect anatomy
d. Animals
e. Wild Animal

- c. Metamorphosis of Bee
24. When did bees and flowering plants both evolve?
- 200 million years ago
 - 150 million years ago
 - 100 million years ago
 - 300 million years ago
 - 100 billion years ago
25. What is the aim of angiosperms?
- help of insects had to physically move pollen grains from plants 'anthers
 - share some traits with ants
 - make up the insect order Hymenoptera
 - help digestion inside bee's body
 - eating pollen and nectar from the newly-evolved plants
26. There are differentiation between wasps and bees, except...
- wasps is carnivores, bees become herbivore
 - wasps lay their eggs in the bodies of their prey, bees pollinating flowers as they went
 - bees and wasps make up the insect order Hymenoptera
 - wasps eat small animal, bees eating pollen and nectar from the newly-evolved plants
 - bees evolved from a mutual, wasp-like ancestor
27. Which animals that have membranous wings?
- ants, bees, hen
 - bees, wasps, ants
 - butterflies, wasps, dragonfly
 - dragonfly, ants, goat
 - mosquito, bees, wasps

Questions 28-33 are based on the following text.

A bee's body has a lot in common with the bodies of other insects. Much of it is covered in an exoskeleton made from small, movable plates of chitin. A bee's is also covered in lots of fuzzy, branched hair, which collects pollen and helps regulate body temperature. The body also has three sections – the head, the thorax and the abdomen.

The head houses in the brain, a collection of about 950,000 neurons. These neurons are specialized, and they communicate with the specific neighboring neurons. This division of tasks is part of why a bee's brain, which is a fraction of the size of the bee's head, can perform complex tasks that might ordinarily require a bigger brain. A system of nerves allows the brain to communicate with the rest of the body.

On its head, a bee has two sensory antennae. It also has five eyes – three simple eyes, or ocelli, and two compound eyes. The compound eyes are made of lots of small, repeating eye parts called ommatidia. In each compound eye, about

150 ommatidia specialize in seeing patterns. This allows bees to detect polarized light – something human beings cannot do. (*Taken from: “Hello” magazine No.296,2010: page 19*)

28. What is the main idea of the first paragraph?
- Much of it is covered in an exoskeleton made from small, movable plates of chitin
 - The body also has three sections – the head, the thorax and the abdomen.
 - A bee’s is also covered in lots of fuzzy, branched hair
 - A bee’s body has a lot in common with the bodies of other insects
 - Collects pollen and helps regulate body temperature
29. Which part does not belong to the bee’s body?
- head
 - fuzzy
 - leg
 - thorax
 - abdomen
30. How much the collection of neurons in the bee’s brain?
- 1,000,000
 - 600
 - 2500
 - 20,000
 - 950,000
31. What is the advantage of a system of nerves?
- allows the brain to communicate with the rest of the body
 - allows the brain to circulates the blood to the body
 - allows the brain to eat the food
 - allows the brain to fly
 - allows the brain to communicate with the specific neighboring neurons
32. *It* also has five eyes – three simple eyes, or ocelli, and two compound eyes. *It* in the last paragraph refers to...
- wasps
 - ants
 - antennae
 - bee
 - eyes
33. How much ommatidia specialize in seeing patterns?
- 1500
 - 100
 - 160
 - 130
 - 150

Questions 34-36 are based on the following text.

Like most insects, a bee has complex mouth parts that it uses to eat and drink. The sizes and shapes of these parts can vary from species to species, but in general, most have:

- Paired mandibles, or jaws
- A glossa, or tongue
- A labrum and maxillae

The labrum and maxillae are like lips. They support a proboscis, or tube for collecting nectar.

A bee's two pairs of wings and three pairs of legs connect to its thorax. The wings are extremely thin pieces of the bee's skeleton. In many species, the front wings are large than the back wings. A row of hooks called hamuli connect the front and rear wings so they beat together when the bee is flying. (*Taken from: "Hello" magazine No.296,2010: page 19*)

34. What is the function of mouth for bee?
- | | |
|--------------------------|------------|
| a. to hear the voice | d. to see |
| b. to eat and drink | e. to prey |
| c. to walk in the ground | |
35. What is another name of tongue?
- | | |
|-----------|-------------|
| a. labrum | d. maxillae |
| b. hamuli | e. jaws |
| c. glossa | |
36. Where did the wings and the legs connected?
- | | |
|-------------------|------------------|
| a. in the thorax | d. in the mouth |
| b. in the abdomen | e. in the glossa |
| c. in the head | |

Questions 37-40 are based on the following text.

Habits

Butterflies feed primarily on nectar from flowers. Some also derive nourishment from pollen, tree sap, rotting fruit, dung, and dissolved minerals in wet sand and dirt. Butterflies play an important ecological role as pollinators.

As adults, butterflies consume only liquids and these are sucked by means of their proboscis. They feed on nectar from flowers and also sip water from damp patches. This they do for water, for energy from sugars in nectar and for sodium and other minerals which are vital for their reproduction. Several pieces of butterflies need more sodium than provided by nectar. They are attracted to sodium in salt and they sometimes land on people, attracted by human sweat. Besides damp patches, some butterflies also visit dung, rotting fruit or carcasses to

obtain minerals and nutrients. In many species, this Mud-puddling behavior is restricted to the males and studies have suggested that the nutrients collected are provided as a nuptial gift along with the spermatophore during mating. (Taken from: "Hello" magazine No.265,2008: page 22)

37. Butterflies derive nourishment from several things, except...
- a. tree sap
 - b. dung
 - c. sugar
 - d. pollen
 - e. rotting fruit
38. Where do butterflies get the nectar?
- a. from flowers
 - b. from trees
 - c. from dung
 - d. from human
 - e. from damp
39. What is the advantage of sodium for butterflies?
- a. to make butterflies invulnerable from the disease
 - b. for reproduction
 - c. for metamorphose
 - d. to ingestion
 - e. for energy
40. The nutrients collected are provided as a nuptial gift along with the spermatophore during *mating*. What is the meaning of "mating" in Indonesia?
- a. memangsa
 - b. mencerna
 - c. kawin
 - d. penyerbukan
 - e. mengkonsumsi

Appendix 21

PRE TEST

Read the text and choose the correct answer for every question below.

Questions 1-7 are based on the following text.

Anesthesia, essentially a reversible condition induced by drugs, is intended to result in one or more different states of being. It can relieve pain, give you amnesia to knock out your memory of the procedure or how it felt, reduce anxiety (because who doesn't have anxiety when undergoing a medical procedure?) and paralyze your muscles.

It sounds a little scary, but anesthesia is made as safe as possible by careful calculation of the required dosages and diligent monitoring by medical professionals. And not all types of anesthesia are created equal.

When you think of anesthesia, it's likely you think of what's called general anesthesia, which is when you're completely unconscious during a medical procedure such as a major surgery. But there are several different types, and not all of them leave you oblivious to the world. Local anesthesia, for example, can affect just a small patch of skin. Which type you receive depends on a number of factors, including what kind of medical procedure you need and what your medical history looks like. There can also be some overlap between different types of anesthesia, and often, more than one drug is necessary to produce all the desired effects.

Procedural Sedation, the Twilight Sleep

You may have undergone procedural sedation and not realized that it even qualified as anesthesia. If you've had your wisdom teeth taken out, for example, you've probably had procedural sedation. This type of anesthesia is used for short, relatively minor medical procedure and is also known as conscious sedation or twilight anesthesia. In addition to dental work, procedural sedation is used for things like setting broken bones, LASIK and minor cosmetic surgeries.

Under procedural sedation, you remain fully awake and can respond to questions and instructions. That doesn't necessarily mean that you know what's going on, though – you'll be sleepy and relaxed. You typically won't remember the procedure or the short period of time following it. Some of the drugs used in procedural sedation can make you feel giddy or euphoric. (*Taken from: "Hello" magazine, No. 295 page 14-15, 2010*)

1. What is anesthesia?
 - a. Anesthesia is the one of disease
 - b. Anesthesia is very dangerous because it can make us amnesia
 - c. Anesthesia, essentially a reversible condition induced by drugs, is intended to result in one or more different states of being
 - d. Anesthesia has undergone procedural sedation
 - e. Anesthesia is used for short, relatively minor medical procedure and is also known as conscious sedation
2. What is the meaning of you in the text above?
 - a. The reader
 - b. The writer
 - c. Someone who consume drug
 - d. the doctor
 - e. the patient
3. The following is true about anesthesia, *except*...
 - a. Anesthesia give you amnesia to knock out your memory of the procedure or how it felt
 - b. But there are several different types, and not all of them leave you oblivious to the world
 - c. Some of the drugs used in procedural sedation can make you feel giddy or euphoric
 - d. Local anesthesia can't affect just a small patch of skin
 - e. More than one drug is necessary to produce all the desired effects
4. What does the word "this" in the fourth paragraph refers to?
 - a. procedural sedation
 - b. anesthesia
 - c. twilight anesthesia
 - d. drugs
 - e. broken bones
5. What is the synonym of "giddy" in the last paragraph?
 - a. feel
 - b. weak
 - c. powerful
 - d. beautiful
 - e. confused
6. What is the result of procedural sedation?
 - a. make giddy
 - b. feel happy
 - c. increase enthusiasm
 - d. make worried
 - e. decrease the problem

Questions 8-12 are based on the following text.

What causes allergies?

To help answer this question, let's look at a common household example. A few months after the new cat arrives in the house, dad begins to have itchy eyes and episodes of sneezing. One of the three children develops coughing and wheezing, especially when the cat comes into her bedroom. The mom and the

other two children experience no reaction whatsoever to the presence of the cat. How can we explain this?

The immune system is the body's organized defense mechanism against foreign invaders, particularly infections. Its job is to recognize and react to these foreign substances, which are called antigens. Antigens are substances that are capable of causing the production of antibodies. Antigens may or may not lead to an allergic reaction. Allergens are certain antigens that cause an allergic reaction and the production of IgE.

The aim of the immune system is to mobilize its forces at the site of invasion and destroy the enemy. One of the ways it does this is to create protective proteins called antibodies that are specifically targeted against particular foreign substance. These antibodies, or immunoglobulins (IgG, IgM, IgA, IgD), are protective and help destroy a foreign particle by attaching to its surface, thereby making it easier for other immune cells to destroy it. The allergic person however, develops a specify type of antibody called immunoglobulin E, or IgE, in response to certain normally harmless foreign substances, such as cat dander. To summarize, immunoglobulin are a group of protein molecules that act as antibodies. There are five different types; IgG, IgM, IgA, IgD, and IgE. IgE is the allergy antibody. (Taken from: "Hello" magazine No. 295,2010: page 14-15)

7. What is the title of the text above?
 - a. allergies
 - b. household
 - c. immune
 - d. antigens
 - e. allergens
8. The following is true about the aim of the immune system that is...
 - a. to mobilize its forces at the site of invasion and destroy the enemy
 - b. develops a specify type of antibody
 - c. cause an allergic reaction and the production
 - d. to make the body incentive from the disease
 - e. to help ingestion of our body
9. Which are the kinds of antibodies or immunoglobulin?
 - a. IgB, IgM, IgC, IgD, IgE
 - b. IgA, IgC, IgD, IgE, IgN
 - c. IgG, IgM, IgA, IgD, IgE
 - d. IgG, IgE, IgM, IgB, IgD
 - e. IgK, IgM, IgE, IgP, IgD
10. Which antibodies that the function as allergy antibody?
 - a. IgA
 - b. IgD
 - c. IgM
 - d. IgG
 - e. IgE

Questions 13-18 are based on the following text.

THE HISTORY OF TRAIN

At the end of 18th century, the steam engine became a real and positive factor in the industry, and different attempts had been made to apply it to the road vehicles. The merit to carry out the construction of the first locomotive that marched on the tracks corresponds to Richard Trevithick that, in February of 1804, used a locomobile machine to carry coal in the road of Penydaran, in South Wales United Kingdom.

The locomotive of Trevithick, according to the most authorized references, was very similar to the attached figure in this page. The boiler was made of strained iron with inner furnace, and the products of the combustion were directed to a chimney located in the same end of the mouth of the firebox. The steam engine, that is to say, the cylinder with the piston, was arranged vertically, and the connecting bars represented in the figure by D, that acted as a connecting rod, and the L connected with the motor axis.

The steam after having operated, escaped by the chimney to increase the shot, and this system is depended on the friction of the driving wheels on the tracks to assure sufficient traction power. The pressure of the steam was about 40 pounds by square inch; so that strictly speaking it was a machine of high pressure. The safety valve, E, prevented an excessive pressure in the boiler. This locomotive worked well, but its economic results were not satisfactory. (*Taken from: "Hello" magazine No.265,2008: page 30*)

11. When did the steam engine become a real and positive factor in the industry?
 - a. 10th century
 - b. 18th century
 - c. 22nd century
 - d. 20th century
 - e. 12th century
12. Where did the coal carry?
 - a. South of Africa
 - b. New Zealand
 - c. South Wales
 - d. Australia
 - e. America
13. How the boiler was made of?
 - a. copper
 - b. gold
 - c. clay
 - d. sand
 - e. iron
14.and this system is depended on the friction of the driving wheels on the tracks...

The underline word in the last paragraph refers to...

 - a. locomotive
 - b. steam
 - c. chimney
 - d. iron
 - e. boiler

Complete the following sentences using the words.

The following successful attempt to (19)....a steam locomotive was done by Blenkinsop in 1812. This machine, as it in the corresponding figure, had two cylinders of 203 millimeters of diameter each one and arrange vertically, like in the machine of Trevithick. The connecting bars, nevertheless, acted on axes with pinions that rotated a great dented wheel that matched as well in the edges of the rails of the track. The supporting (20)..... of the machine of Blenkinsop was followed, in 1813, by another denominated “Puffing Billy”, devised by Blackett, the almost completely agreed upon the same Blenkinsop’s system in the general structure of the vehicle, but that obtained the effect of traction by means of the supporting wheels, like in the (21)..... invented by Trevithick. (*Taken from: “Hello” magazine No.265,2008: page 31*)

- | | |
|-------------------|-------------------|
| 15. a. obtain | d. support |
| b. bring | e. edit |
| c. abandon | |
| 16. a. iron | d. chair |
| b. key | e. wheels |
| c. gold | |
| 17. a. locomotive | d. transportation |
| b. vehicle | e. train |
| c. pedicab | |

Questions 23-27 are based on the following text.

Scientists suspect that bees and flowering plants both evolved around 100 million years ago, in the middle of Cretaceous period. Before this period, many plants reproduced the way today’s conifers do. They released seeds and pollen using cones. The wind carried the cones, and eventually the pollen came into contact with the seeds and fertilizes them. During the cretaceous period, some plants began to reproduce using flowers. Unlike conifers, these plants, called angiosperms, needed the help of insects had to physically move pollen grains from plants ‘anthers, or their male structures, to their stigmas, or female structures.

At about the same time, bees differentiated themselves from their wasp-like ancestors. Prehistoric wasps were carnivores that lay their eggs in the bodies of

their prey. Bees became herbivores, eating pollen and nectar from the newly-evolved plants and pollinating flowers as they went. Fossil evidence supports this theory – the oldest known bee fossil is 100 million years old, and the preserved bee has several wasp-like features. This doesn't necessarily mean that bees and wasps both evolved from wasps. It's more likely that bees and wasps both evolved from a mutual, wasp-like ancestor.

Today, bees still have several physical features in common with their wasp cousins. They also share some traits with ants. Together, bees, wasps and ants make up the insect order Hymenoptera, which means “membranous wings.” (Taken from: “Hello” magazine No.296,2010: page 18)

18. What is the title of the text above?
- Bee's body
 - Bee anatomy
 - Metamorphosis of Bee
 - Animals
 - Wild Animal
19. What is the aim of angiosperms?
- help of insects had to physically move pollen grains from plants 'anthers
 - share some traits with ants
 - make up the insect order Hymenoptera
 - help digestion inside bee's body
 - eating pollen and nectar from the newly-evolved plants
20. There are differentiation between wasps and bees, except...
- wasps is carnivores, bees become herbivore
 - wasps lay their eggs in the bodies of their prey, bees pollinating flowers as they went
 - bees and wasps make up the insect order Hymenoptera
 - wasps eat small animal, bees eating pollen and nectar from the newly-evolved plants
 - bees evolved from a mutual, wasp-like ancestor

Questions 28-33 are based on the following text.

A bee's body has a lot in common with the bodies of other insects. Much of it is covered in an exoskeleton made from small, movable plates of chitin. A bee's is also covered in lots of fuzzy, branched hair, which collects pollen and helps regulate body temperature. The body also has three sections – the head, the thorax and the abdomen.

The head houses in the brain, a collection of about 950,000 neurons. These neurons are specialized, and they communicate with the specific neighboring neurons. This division of tasks is part of why a bee's brain, which is a fraction of the size of the bee's head, can perform complex tasks that might ordinarily require

a bigger brain. A system of nerves allows the brain to communicate with the rest of the body.

On its head, a bee has two sensory antennae. It also has five eyes – three simple eyes, or ocelli, and two compound eyes. The compound eyes are made of lots of small, repeating eye parts called ommatidia. In each compound eye, about 150 ommatidia specialize in seeing patterns. This allows bees to detect polarized light – something human beings cannot do. (*Taken from: "Hello" magazine No.296,2010: page 19*)

21. What is the main idea of the first paragraph?
- Much of it is covered in an exoskeleton made from small, movable plates of chitin
 - The body also has three sections – the head, the thorax and the abdomen.
 - A bee's is also covered in lots of fuzzy, branched hair
 - A bee's body has a lot in common with the bodies of other insects
 - Collects pollen and helps regulate body temperature
22. Which part does not belong to the bee's body?
- head
 - fuzzy
 - leg
 - thorax
 - abdomen
23. How much the collection of neurons in the bee's brain?
- 1,000,000
 - 600
 - 2500
 - 20,000
 - 950,000
24. *It* also has five eyes – three simple eyes, or ocelli, and two compound eyes. *It* in the last paragraph refers to...
- wasps
 - ants
 - antennae
 - bee
 - eyes

Questions 34-36 are based on the following text.

Like most insects, a bee has complex mouth parts that it uses to eat and drink. The sizes and shapes of these parts can vary from species to species, but in general, most have:

- Paired mandibles, or jaws
- A glossa, or tongue
- A labrum and maxillae

The labrum and maxillae are like lips. They support a proboscis, or tube for collecting nectar.

A bee's two pairs of wings and three pairs of legs connect to its thorax. The wings are extremely thin pieces of the bee's skeleton. In many species, the front wings are large than the back wings. A row of hooks called hamuli connect the front and rear wings so they beat together when the bee is flying. (*Taken from: "Hello" magazine No.296,2010: page 19*)

25. What is the function of mouth for bee?
- | | |
|--------------------------|------------|
| a. to hear the voice | d. to see |
| b. to eat and drink | e. to prey |
| c. to walk in the ground | |
26. What is another name of tongue?
- | | |
|-----------|-------------|
| a. labrum | d. maxillae |
| b. hamuli | e. jaws |
| c. glossa | |

Questions 37-40 are based on the following text.

Habits

Butterflies feed primarily on nectar from flowers. Some also derive nourishment from pollen, tree sap, rotting fruit, dung, and dissolved minerals in wet sand and dirt. Butterflies play an important ecological role as pollinators.

As adults, butterflies consume only liquids and these are sucked by means of their proboscis. They feed on nectar from flowers and also sip water from damp patches. This they do for water, for energy from sugars in nectar and for sodium and other minerals which are vital for their reproduction. Several pieces of butterflies need more sodium than provided by nectar. They are attracted to sodium in salt and they sometimes land on people, attracted by human sweat. Besides damp patches, some butterflies also visit dung, rotting fruit or carcasses to obtain minerals and nutrients. In many species, this Mud-puddling behavior is restricted to the males and studies have suggested that the nutrients collected are provided as a nuptial gift along with the spermathopore during mating. (*Taken from: "Hello" magazine No.265,2008: page 22*)

27. Butterflies derive nourishment from several things, except...
- | | |
|-------------|------------------|
| a. tree sap | d. pollen |
| b. dung | e. rotting fruit |
| c. sugar | |
28. Where do butterflies get the nectar?
- | | |
|-----------------|---------------|
| a. from flowers | d. from human |
| b. from trees | e. from damp |
| c. from dung | |

29. What is the advantage of sodium for butterflies?
- a. to make butterflies invulnerable from the disease
 - b. for reproduction
 - c. for metamorphose
 - d. to ingestion
 - e. for energy
30. The nutrients collected are provided as a nuptial gift along with the spermatophore during *mating*. What is the meaning of “mating” in Indonesia?
- a. memangsa
 - b. mencerna
 - c. kawin
 - d. penyerbukan
 - e. mengkonsumsi

Appendix 22

POST TEST

Read the text and choose the correct answer for every question below.

Questions 1-7 are based on the following text.

Anesthesia, essentially a reversible condition induced by drugs, is intended to result in one or more different states of being. It can relieve pain, give you amnesia to knock out your memory of the procedure or how it felt, reduce anxiety (because who doesn't have anxiety when undergoing a medical procedure?) and paralyze your muscles.

It sounds a little scary, but anesthesia is made as safe as possible by careful calculation of the required dosages and diligent monitoring by medical professionals. And not all types of anesthesia are created equal.

When you think of anesthesia, it's likely you think of what's called general anesthesia, which is when you're completely unconscious during a medical procedure such as a major surgery. But there are several different types, and not all of them leave you oblivious to the world. Local anesthesia, for example, can affect just a small patch of skin. Which type you receive depends on a number of factors, including what kind of medical procedure you need and what your medical history looks like. There can also be some overlap between different types of anesthesia, and often, more than one drug is necessary to produce all the desired effects.

Procedural Sedation, the Twilight Sleep

You may have undergone procedural sedation and not realized that it even qualified as anesthesia. If you've had your wisdom teeth taken out, for example, you've probably had procedural sedation. This type of anesthesia is used for short, relatively minor medical procedure and is also known as conscious sedation or twilight anesthesia. In addition to dental work, procedural sedation is used for things like setting broken bones, LASIK and minor cosmetic surgeries.

Under procedural sedation, you remain fully awake and can respond to questions and instructions. That doesn't necessarily mean that you know what's going on, though – you'll be sleepy and relaxed. You typically won't remember the procedure or the short period of time following it. Some of the drugs used in procedural sedation can make you feel giddy or euphoric. (*Taken from: "Hello" magazine, No. 295 page 14-15, 2010*)

1. What is anesthesia?
 - a. Anesthesia is the one of disease
 - b. Anesthesia is very dangerous because it can make us amnesia
 - c. Anesthesia, essentially a reversible condition induced by drugs, is intended to result in one or more different states of being
 - d. Anesthesia has undergone procedural sedation
 - e. Anesthesia is used for short, relatively minor medical procedure and is also known as conscious sedation
2. What is the meaning of you in the text above?
 - a. The reader
 - b. The writer
 - c. Someone who consume drug
 - d. the doctor
 - e. the patient
3. The following is true about anesthesia, *except*...
 - a. Anesthesia give you amnesia to knock out your memory of the procedure or how it felt
 - b. But there are several different types, and not all of them leave you oblivious to the world
 - c. Some of the drugs used in procedural sedation can make you feel giddy or euphoric
 - d. Local anesthesia can't affect just a small patch of skin
 - e. More than one drug is necessary to produce all the desired effects
4. What does the word "this" in the fourth paragraph refers to?
 - a. procedural sedation
 - b. anesthesia
 - c. twilight anesthesia
 - d. drugs
 - e. broken bones
5. What is the synonym of "giddy" in the last paragraph?
 - a. feel
 - b. weak
 - c. powerful
 - d. beautiful
 - e. confused
6. What is the result of procedural sedation?
 - a. make giddy
 - b. feel happy
 - c. increase enthusiasm
 - d. make worried
 - e. decrease the problem

Questions 8-12 are based on the following text.

What causes allergies?

To help answer this question, let's look at a common household example. A few months after the new cat arrives in the house, dad begins to have itchy eyes and episodes of sneezing. One of the three children develops coughing and wheezing, especially when the cat comes into her bedroom. The mom and the

other two children experience no reaction whatsoever to the presence of the cat. How can we explain this?

The immune system is the body's organized defense mechanism against foreign invaders, particularly infections. Its job is to recognize and react to these foreign substances, which are called antigens. Antigens are substances that are capable of causing the production of antibodies. Antigens may or may not lead to an allergic reaction. Allergens are certain antigens that cause an allergic reaction and the production of IgE.

The aim of the immune system is to mobilize its forces at the site of invasion and destroy the enemy. One of the ways it does this is to create protective proteins called antibodies that are specifically targeted against particular foreign substance. These antibodies, or immunoglobulins (IgG, IgM, IgA, IgD), are protective and help destroy a foreign particle by attaching to its surface, thereby making it easier for other immune cells to destroy it. The allergic person however, develops a specify type of antibody called immunoglobulin E, or IgE, in response to certain normally harmless foreign substances, such as cat dander. To summarize, immunoglobulin are a group of protein molecules that act as antibodies. There are five different types; IgG, IgM, IgA, IgD, and IgE. IgE is the allergy antibody. (Taken from: "Hello" magazine No. 295,2010: page 14-15)

7. What is the title of the text above?
 - a. allergies
 - b. household
 - c. immune
 - d. antigens
 - e. allergens
8. The following is true about the aim of the immune system that is...
 - a. to mobilize its forces at the site of invasion and destroy the enemy
 - b. develops a specify type of antibody
 - c. cause an allergic reaction and the production
 - d. to make the body incentive from the disease
 - e. to help ingestion of our body
9. Which are the kinds of antibodies or immunoglobulin?
 - a. IgB, IgM, IgC, IgD, IgE
 - b. IgA, IgC, IgD, IgE, IgN
 - c. IgG, IgM, IgA, IgD, IgE
 - d. IgG, IgE, IgM, IgB, IgD
 - e. IgK, IgM, IgE, IgP, IgD
10. Which antibodies that the function as allergy antibody?
 - a. IgA
 - b. IgD
 - c. IgM
 - d. IgG
 - e. IgE

Questions 13-18 are based on the following text.

THE HISTORY OF TRAIN

At the end of 18th century, the steam engine became a real and positive factor in the industry, and different attempts had been made to apply it to the road vehicles. The merit to carry out the construction of the first locomotive that marched on the tracks corresponds to Richard Trevithick that, in February of 1804, used a locomobile machine to carry coal in the road of Penydaran, in South Wales United Kingdom.

The locomotive of Trevithick, according to the most authorized references, was very similar to the attached figure in this page. The boiler was made of strained iron with inner furnace, and the products of the combustion were directed to a chimney located in the same end of the mouth of the firebox. The steam engine, that is to say, the cylinder with the piston, was arranged vertically, and the connecting bars represented in the figure by D, that acted as a connecting rod, and the L connected with the motor axis.

The steam after having operated, escaped by the chimney to increase the shot, and this system is depended on the friction of the driving wheels on the tracks to assure sufficient traction power. The pressure of the steam was about 40 pounds by square inch; so that strictly speaking it was a machine of high pressure. The safety valve, E, prevented an excessive pressure in the boiler. This locomotive worked well, but its economic results were not satisfactory. (*Taken from: "Hello" magazine No.265,2008: page 30*)

11. When did the steam engine become a real and positive factor in the industry?
 - a. 10th century
 - b. 18th century
 - c. 22nd century
 - d. 20th century
 - e. 12th century
12. Where did the coal carry?
 - a. South of Africa
 - b. New Zealand
 - c. South Wales
 - d. Australia
 - e. America
13. How the boiler was made of?
 - a. copper
 - b. gold
 - c. clay
 - d. sand
 - e. iron
14.and this system is depended on the friction of the driving wheels on the tracks...

The underline word in the last paragraph refers to...

 - a. locomotive
 - b. steam
 - c. chimney
 - d. iron
 - e. boiler

Complete the following sentences using the words.

The following successful attempt to (19)....a steam locomotive was done by Blenkinsop in 1812. This machine, as it in the corresponding figure, had two cylinders of 203 millimeters of diameter each one and arrange vertically, like in the machine of Trevithick. The connecting bars, nevertheless, acted on axes with pinions that rotated a great dented wheel that matched as well in the edges of the rails of the track. The supporting (20)..... of the machine of Blenkinsop was followed, in 1813, by another denominated “Puffing Billy”, devised by Blackett, the almost completely agreed upon the same Blenkinsop’s system in the general structure of the vehicle, but that obtained the effect of traction by means of the supporting wheels, like in the (21)..... invented by Trevithick. (*Taken from: “Hello” magazine No.265,2008: page 31*)

- | | |
|-------------------|-------------------|
| 15. a. obtain | d. support |
| b. bring | e. edit |
| c. abandon | |
| 16. a. iron | d. chair |
| b. key | e. wheels |
| c. gold | |
| 17. a. locomotive | d. transportation |
| b. vehicle | e. train |
| c. pedicab | |

Questions 23-27 are based on the following text.

Scientists suspect that bees and flowering plants both evolved around 100 million years ago, in the middle of Cretaceous period. Before this period, many plants reproduced the way today’s conifers do. They released seeds and pollen using cones. The wind carried the cones, and eventually the pollen came into contact with the seeds and fertilizes them. During the cretaceous period, some plants began to reproduce using flowers. Unlike conifers, these plants, called angiosperms, needed the help of insects had to physically move pollen grains from plants ‘anthers, or their male structures, to their stigmas, or female structures.

At about the same time, bees differentiated themselves from their wasp-like ancestors. Prehistoric wasps were carnivores that lay their eggs in the bodies of their prey. Bees became herbivores, eating pollen and nectar from the newly-

evolved plants and pollinating flowers as they went. Fossil evidence supports this theory – the oldest known bee fossil is 100 million years old, and the preserved bee has several wasp-like features. This doesn't necessarily mean that bees and wasps both evolved from wasps. It's more likely that bees and wasps both evolved from a mutual, wasp-like ancestor.

Today, bees still have several physical features in common with their wasp cousins. They also share some traits with ants. Together, bees, wasps and ants make up the insect order Hymenoptera, which means “membranous wings.”
(Taken from: “Hello” magazine No.296,2010: page 18)

18. What is the title of the text above?
 - a. Bee's body
 - b. Bee anatomy
 - c. Metamorphosis of Bee
 - d. Animals
 - e. Wild Animal
19. What is the aim of angiosperms?
 - a. help of insects had to physically move pollen grains from plants 'anthers
 - b. share some traits with ants
 - c. make up the insect order Hymenoptera
 - d. help digestion inside bee's body
 - e. eating pollen and nectar from the newly-evolved plants
20. There are differentiation between wasps and bees, except...
 - a. wasps is carnivores, bees become herbivore
 - b. wasps lay their eggs in the bodies of their prey, bees pollinating flowers as they went
 - c. bees and wasps make up the insect order Hymenoptera
 - d. wasps eat small animal, bees eating pollen and nectar from the newly-evolved plants
 - e. bees evolved from a mutual, wasp-like ancestor

Questions 28-33 are based on the following text.

A bee's body has a lot in common with the bodies of other insects. Much of it is covered in an exoskeleton made from small, movable plates of chitin. A bee's is also covered in lots of fuzzy, branched hair, which collects pollen and helps regulate body temperature. The body also has three sections – the head, the thorax and the abdomen.

The head houses in the brain, a collection of about 950,000 neurons. These neurons are specialized, and they communicate with the specific neighboring neurons. This division of tasks is part of why a bee's brain, which is a fraction of the size of the bee's head, can perform complex tasks that might ordinarily require

a bigger brain. A system of nerves allows the brain to communicate with the rest of the body.

On its head, a bee has two sensory antennae. It also has five eyes – three simple eyes, or ocelli, and two compound eyes. The compound eyes are made of lots of small, repeating eye parts called ommatidia. In each compound eye, about 150 ommatidia specialize in seeing patterns. This allows bees to detect polarized light – something human beings cannot do. (*Taken from: "Hello" magazine No.296,2010: page 19*)

21. What is the main idea of the first paragraph?
- Much of it is covered in an exoskeleton made from small, movable plates of chitin
 - The body also has three sections – the head, the thorax and the abdomen.
 - A bee's is also covered in lots of fuzzy, branched hair
 - A bee's body has a lot in common with the bodies of other insects
 - Collects pollen and helps regulate body temperature
22. Which part does not belong to the bee's body?
- head
 - fuzzy
 - leg
 - thorax
 - abdomen
23. How much the collection of neurons in the bee's brain?
- 1,000,000
 - 600
 - 2500
 - 20,000
 - 950,000
24. *It* also has five eyes – three simple eyes, or ocelli, and two compound eyes. *It* in the last paragraph refers to...
- wasps
 - ants
 - antennae
 - bee
 - eyes

Questions 34-36 are based on the following text.

Like most insects, a bee has complex mouth parts that it uses to eat and drink. The sizes and shapes of these parts can vary from species to species, but in general, most have:

- Paired mandibles, or jaws
- A glossa, or tongue
- A labrum and maxillae

The labrum and maxillae are like lips. They support a proboscis, or tube for collecting nectar.

A bee's two pairs of wings and three pairs of legs connect to its thorax. The wings are extremely thin pieces of the bee's skeleton. In many species, the front wings are large than the back wings. A row of hooks called hamuli connect the front and rear wings so they beat together when the bee is flying. (*Taken from: "Hello" magazine No.296,2010: page 19*)

25. What is the function of mouth for bee?
- | | |
|--------------------------|------------|
| a. to hear the voice | d. to see |
| b. to eat and drink | e. to prey |
| c. to walk in the ground | |
26. What is another name of tongue?
- | | |
|-----------|-------------|
| a. labrum | d. maxillae |
| b. hamuli | e. jaws |
| c. glossa | |

Questions 37-40 are based on the following text.

Habits

Butterflies feed primarily on nectar from flowers. Some also derive nourishment from pollen, tree sap, rotting fruit, dung, and dissolved minerals in wet sand and dirt. Butterflies play an important ecological role as pollinators.

As adults, butterflies consume only liquids and these are sucked by means of their proboscis. They feed on nectar from flowers and also sip water from damp patches. This they do for water, for energy from sugars in nectar and for sodium and other minerals which are vital for their reproduction. Several pieces of butterflies need more sodium than provided by nectar. They are attracted to sodium in salt and they sometimes land on people, attracted by human sweat. Besides damp patches, some butterflies also visit dung, rotting fruit or carcasses to obtain minerals and nutrients. In many species, this Mud-puddling behavior is restricted to the males and studies have suggested that the nutrients collected are provided as a nuptial gift along with the spermathopore during mating. (*Taken from: "Hello" magazine No.265,2008: page 22*)

27. Butterflies derive nourishment from several things, except...
- | | |
|-------------|------------------|
| a. tree sap | d. pollen |
| b. dung | e. rotting fruit |
| c. sugar | |
28. Where do butterflies get the nectar?
- | | |
|-----------------|---------------|
| a. from flowers | d. from human |
| b. from trees | e. from damp |
| c. from dung | |

29. What is the advantage of sodium for butterflies?
- a. to make butterflies invulnerable from the disease
 - b. for reproduction
 - c. for metamorphose
 - d. to ingestion
 - e. for energy
30. The nutrients collected are provided as a nuptial gift along with the spermatophore during *mating*. What is the meaning of “mating” in Indonesia?
- a. memangsa
 - b. mencerna
 - c. kawin
 - d. penyerbukan
 - e. mengkonsumsi

Appendix 23

Treatment 1

DON'T EVEN TRY IT: ELECTRIC CHAIR

The first electric chair was design in 1888/9. Although they stated reason for its development was that was to be a more human method of execution, there was also another interesting reason.

In the 1880's, electricity was a new and novel power source. Thomas Edison and Westinghouse were the two major players in the struggle to control electrical utilities. Technical and economic circumstances made Westinghouse's alternating current superior to Edison's direct current. Alternating current was soon adopted as the standard for electrical transmission worldwide. Edison had tried to convince everyone that Westinghouse's AC current was unsafe and was delighted when New York State introduced the electric chair, which required alternating current.

Questions 1-5 are based on the text above.

1. When was the electricity design?
2. Who are control electrical utilities?
3. What is the function of alternating current?
4. What did Edison do to make everyone unbelief about Westinghouse?

The electric chair was used in 27 states at one time or another and also by the Philippines, the only country outside the USA to use it.

On June 4th 1888, the New York Legislature passed Chapter 489 of Laws of New York of 1888, providing for the execution by "a current of electricity of sufficient intensity to cause death" for offences committed after January 1st, 1889.

There was one small problem-New York did not possess an electric chair and had to commission Harold Brown, an electrician, to build a chair for each of the 3 prisons, where executions were to take place, - Auburn, Sing-Sing and Clinton. This seemed a very generous provision for an average of 8 executions per annum statewide.

Brown favored Westinghouse's alternating current for the purpose which made him most unpopular with George Westinghouse who was trying to promote it as a safe form of domestic energy. Westinghouse refused to supply Brown with the necessary generators and he was forced to buy second-hand units.

The chairs were solid constructions made from oak and each had two electrodes, one for the head and one for the lower back. (*Taken from: "Hello" magazine No.265,2008: page 10-11*)

Questions 6-10 are based on the text above.

5. What country did use the electric chair outside USA?
6. How much chapters in the Laws of New York?
7. What is the problem that New York did not possess an electric chair?
8. How much the state was used the electric chair?
9. What is the Brown's purpose of favored Westinghouse's alternating current?
10. How do the chairs made?

ANSWER:

1. The electricity was design in 1888/9.
2. Thomas Edison and Westinghouse are control electrical utilities.
3. The function of alternating current is to adopted as the standard for electrical transmission worldwide.
4. Edison had tried to convince everyone that Westinghouse's AC current was unsafe.
5. The country that used electric chair outside USA is Philippines.
6. 1888 chapters.
7. The problem is to build a chair for each of the 3 prisons, where executions were to take place, - Auburn, Sing-Sing and Clinton.
8. There are 27 states was used the electric chair.
9. Brown's purpose is making him most unpopular with George Westinghouse who was trying to promote it as a safe form of domestic energy.
10. The chairs made from oak and each had two electrodes, one for the head and one for the lower back.

Appendix 24

Treatment 2

The execution of William Kemmler on August 6th, 1890.

William Kemmler was convicted of the murder of his lover Tillie Ziegler and became the first man to be sentenced to death under the new law.

Kemmler's lawyers appealed citing the 8th and 14th amendments to the American Constitution which prohibit "cruel and unusual punishment." The appeal was turned down on October 9th, 1889 and the execution date was fixed for August 6th, 1890. It was a strangely casual affair carried out in the presence of 25 whiteness, 14 of them doctors. Kemmler was led into the execution chamber in the basement of Auburn prison and was introduced to the witnesses before taking off his coat and sitting himself into the chair.

The head and spinal electrodes each consisted of a 4-inch diameter wooden cup containing a 3-inch diameter metal plate faced with a layer of sponge which was soaked in brine to improve conductivity.

Kemmler was strapped onto the chair by leather straps around his arms, legs, and waist. The head electrode in a leather harness was applied and a black cloth was pulled over his face. The warden, Charles Durston, gave the signal to Edwin Davis, the executioner, to throw the switch which caused Kemmler to go completely rigid.

1. When did the execution of William Kemmler?
2. Who is William's lover?
3. When did the appeal and the execution fix?
4. What are the content of the head and spinal electrodes?
5. Who is the executioner?

Complete the following paragraph with the suitable words in the box.

He remained in this condition for 17 seconds until the current was (6)..... and then his whole (7)..... appeared to relax. He was certified dead but after half a minute, there were a (8).... of spasmodic movements of the chest which tended to indicate that he was not in fact dead, and the warden ordered a second charge of (9)..... which lasted about 70 seconds until vapor and later smoke could be seen rising from the spinal electrode (10)..... by the smell of burning flash. (*Taken from: "Hello" magazine No.265,2008: page 10-11*)

turned off	electricity
body	series
accompanied	

ANSWER:

1. The execution of William Kemmler on August 6th, 1890.
2. William's lover is Tillie Ziegler.
3. The appeal was on October 9th, 1889 and the execution date was fixed for August 6th, 1890.
4. The head and spinal electrodes each consisted of a 4-inch diameter wooden cup.
5. The executioner is Edwin Davis.
6. Turned off.
7. Body.
8. Series.
9. Electricity.
10. Accompanied.

Appendix 25

Treatment 3

BEAUTIFUL AND PERSISTENT: BUTTERFLIES

Butterflies are nested within the evolutionary tree moths. Their origins may date back to the Cretaceous Period, ending 65 million years ago. Unfortunately, the fossil record is very limited. The oldest known fossil is an unnamed possible skipper butterfly from the upper Palaeocene (around 57 million years old) of Fur, Denmark. One of the most beautifully preserved is a Metalmark butterfly (*Voltinia dramba*) from 25 million year of old Dominican amber.

Butterflies are today distributed throughout the world except in the very cold and arid regions. There are an estimated 17,500 species of butterflies (Papilionoidea) out of about 180,000 species of Lepidoptera.

Butterflies and moths

The dichotomous classification of lepidopterans into butterflies and moths is one that is popular but not used in taxonomy. The folk groups of butterflies and moths can be distinguished using several features but there are exceptions to most of these rules.

The four stages in the lifecycle of a butterfly

Unlike many insects, butterflies do not experience a nymph period, but instead go through a pupal stage which lies between the larva and the adult stage (the imago). Butterflies are termed as holometabolous insects, and go through complete metamorphosis.

- Egg
- Larva, known as caterpillar
- Pupa (chrysalis)
- Adult butterfly (imago)

It is popular belief that butterflies have very short life spans. However, butterflies in their adult stage can live from a week to nearly a year depending on the species. Many species have long larval life stages while others can remain dormant in their pupal or egg stages and thereby survive winter.

Butterfly may have one or more broods per year. The number of generations per year varies from temperate to tropical regions with tropical regions showing a trend towards multivoltinism.

Egg

Egg of *Ariadne merione* Butterfly eggs consist of a hard-ridged outer layer of shell, called the corion. This is lined with a thin coating of wax which prevents the egg from drying out before the larva has had time to fully develop. Each egg contains a number of tiny funnel-shaped openings at one, called micropyles; the purpose of these holes is to allow sperm to enter and fertilize the egg. Butterfly eggs are fixed to a leaf with special glue, which hardens rapidly. As it hardens it contracts, deforming the shape of the egg. This glue is easily seen surrounding the base of every egg forming a meniscus. The nature of the glue is unknown and is a suitable subject for research. The same glue is produced by a pupa to secure the setae of the cremaster. This glue is so hard that the silk pad, to which the setae are

glued, cannot be separated. (Taken from: "Hello" magazine No.265,2008: page 20-21)

Questions

1. When was the oldest known fossil found?
2. Do the butterflies experience a nymph period?
3. How do metamorphosis of butterflies?
4. What is the purpose of micropyles?
5. What is the main idea of the last paragraph?

Match the following words from the text with its meaning. Express ideas using the word.

- | | |
|------------------|--|
| 6. Butterflies | 1. a hard-ridged outer layer of shell |
| 7. Papilionoidea | 2. produced by a pupa to secure the setae of the cremaster |
| 8. Corion | 3. Their origins may date back to the Cretaceous Period, ending 65 million years ago |
| 9. glue | 4. It can live from a week to nearly a year depending on the species |
| 10. adult stage | 5. species of butterflies |

ANSWER:

1. 57 million years old.
2. No, they don't.
3. Metamorphosis of Butterflies
 - Egg
 - Larva, known as caterpillar
 - Pupa (chrysalis)
 - Adult butterfly (imago)
4. The purpose of micropyles to allow sperm to enter and fertilize the egg.
5. Egg of *Ariadne merione* Butterfly eggs consist of a hard-ridged outer layer of shell, called the corion.
6. – Butterflies = Their origins may date back to the Cretaceous Period, ending 65 million years ago
7. Papilionoidea = species of butterflies
8. Corion = a hard-ridged outer layer of shell
9. Glue = produced by a pupa to secure the setae of the cremaster
10. adult stage = It can live from a week to nearly a year depending on the species

Appendix 26**ANSWER SHEET**

Name :

Class :

No. :

1. A B C D E

2. A B C D E

3. A B C D E

4. A B C D E

5. A B C D E

6. A B C D E

7. A B C D E

8. A B C D E

9. A B C D E

10. A B C D E

11. A B C D E

12. A B C D E

13. A B C D E

14. A B C D E

15. A B C D E

16. A B C D E

17. A B C D E

18. A B C D E

- | | | | | |
|-------|---|---|---|---|
| 19. A | B | C | D | E |
| 20. A | B | C | D | E |
| 21. A | B | C | D | E |
| 22. A | B | C | D | E |
| 23. A | B | C | D | E |
| 24. A | B | C | D | E |
| 25. A | B | C | D | E |
| 26. A | B | C | D | E |
| 27. A | B | C | D | E |
| 28. A | B | C | D | E |
| 29. A | B | C | D | E |
| 30. A | B | C | D | E |

Appendix 27**ANSWER OF THE PRE-TEST**

- | | |
|-----|---|
| 1. | C |
| 2. | A |
| 3. | D |
| 4. | A |
| 5. | E |
| 6. | A |
| 7. | A |
| 8. | A |
| 9. | C |
| 10. | E |
| 11. | B |
| 12. | C |
| 13. | E |
| 14. | B |
| 15. | A |
| 16. | E |

17. A
18. B
19. A
20. C
21. D
22. C
23. E
24. D
25. B
26. C
27. C
28. A
29. B
30. C

Appendix 28

ANSWER OF THE POST-TEST

1. C
2. A
3. D
4. A
5. E
6. A
7. A
8. A
9. C
10. E
11. B
12. C
13. E
14. B
15. A
16. E
17. A
18. B
19. A
20. C
21. D

- 22. C
- 23. E
- 24. D
- 25. B
- 26. C
- 27. C
- 28. A
- 29. B
- 30. C

Appendix 29

ANSWER OF THE TRY OUT TEST

- 1. B
- 2. C
- 3. A
- 4. D
- 5. A
- 6. E
- 7. A
- 8. A
- 9. B
- 10. A
- 11. C
- 12. E
- 13. B
- 14. C
- 15. E
- 16. B
- 17. A
- 18. D
- 19. A
- 20. C
- 21. E
- 22. A
- 23. B
- 24. C
- 25. A
- 26. C

- 27. B
- 28. D
- 29. C
- 30. E
- 31. A
- 32. D
- 33. E
- 34. B
- 35. C
- 36. A
- 37. C
- 38. A
- 39. B
- 40. C

Appendix 31

LIST OF STUDENTS

NO.	NO INDUK	NAMA
1.	10291	ALIN PURNAWATI
2.	10423	ANIK RISTIANINGSIH
3.	10166	ANINDITA KUSUMAWARDANI
4.	10250	ANISA FATMAWATI
5.	10210	ARDHI LAKSA NUGRAHA
6.	10293	ARI SUPRIYANTO
7.	10429	CATUR HERMAS PURIWIDYANINGRUM
8.	10255	DEWI AMBARWATI
9.	10256	DEWI NOVITA TITISARI
10.	10387	DIAH TIKASARI
11.	10433	DWI ANDRIANI
12.	10346	DWI KHARISMANDRIANTO
13.	10259	DYAH AYU EMILIASARI
14.	10435	EKA YULITA SARI
15.	10177	ENIK DWI ARISJIYANI
16.	10305	ESTI MUSTIKA SARI
17.	10350	EVI PUTRI SULISTYANI
18.	10354	IKA APRILIA ANGGRAHENI
19.	10227	KRISNA
20.	10270	LISA FEBIANINGSIH
21.	10187	MULYONO
22.	10314	MURTININGSIH
23.	10316	NOVI INDAH PUSPITASARI

24.	10189	NOVI WIJANARKO
25.	10275	NUR CAHYA RAMADANA CITRA
26.	10223	OKTA PRASETYANI SUSANTI
27.	10234	PUNDHI LINGGA PRATAMA
28.	10450	PUTRI ASIH SETIARINI
29.	10235	RADEN RORO AGUSTIN WINDHI S.
30.	10263	RETNO INDRAWATI
31.	10236	RINI PURWANINGSIH
32.	10281	SETYANINGSIH
33.	10196	SIGIT UNTORO
34.	10413	SISKA SEPTIANI
35.	10367	SITI ZULAIKA
36.	10370	TIAN ADE SURYANTO
37.	10327	TRI WAHYUNI
38.	10329	WAHID DWI MURTANTO
39.	10287	WIWIK MURGIYANTI
40.	10204	YOGA YUDATAMA

Appendix 32

LESSON PLAN

School	: SMA N 1 Grobogan
Subject	: English
Year	: XI
Skill	: Reading

I. Standard Competence:

5. Understanding the meaning of short functional text and essay of report, narrative and analytical exposition in the context of daily life and to access science.

II. Basic Competence:

5.2 Responding the meaning and the way of rhetoric in essay using the kinds of written language accurately, fluent and acceptably in the context of daily life and to access science of report, narrative, and analytical exposition.

III. Indicators:

The students are able to:

1. Answer some questions based on the text.
2. Understand the contents of the text.

IV. Materials:

1. Reading short passages.
2. Vocabulary related to the text.

V. Learning Methods:

- a. Question and Answer
- b. Explanation
- c. Discussion
- d. Exercises

VI. Learning Activities:

◆ First Meeting

1. Building knowledge of the field
 - Teacher opens the lesson.
 - Teacher checks the student's attendant list.
 - Teacher asks the students about their activities they did on their last weekend.
 - Teacher gives Pre Test.
2. Modeling of the text
 - Teacher shows and gives an example of science articles related to the themes.
 - Teacher asked some questions related to the themes of the text.
 - Teacher reads the text for the students.
 - Students repeat reading the articles.

- Students answer some questions related to the text.

◆ Second Meeting

1. The teacher gives science articles to the students.
2. The teacher read and explained about the articles.
3. The teacher explains the kinds of articles include science articles.
4. The teacher helps the students to enrich their vocabulary.
5. The teacher asks the students to do some exercises.
6. The teacher gives homework to the students.

◆ Third Meeting

1. The teacher discusses the homework.
2. The teacher read and explained about the articles.
3. The teacher explains about grammar that use in the articles.
4. The teacher helps the students to enrich their vocabulary.
5. The teacher asks the students to do some exercises.

◆ Fourth Meeting

1. The teacher gives science articles to the students.
2. The teacher read and explained about the articles.
3. The teacher explains the kinds of articles include science articles.
4. The teacher helps the students to enrich their vocabulary.
5. The teacher asks the students to do some exercises.
6. The teacher checks the students answer.

◆ Fifth Meeting

1. Teacher gives Pre Test.

2. Students answer some questions in the questionnaires

VII. Source and Media:

- a. Articles of science
- b. Book relevant to the topic (Hello Magazine)

VIII. Score:

1. Technical score: portfolio
2. Form: reading test
3. Instrument (see in the appendix)

Appendix 33

Pictures of Activity



