



## Lesson Plan 2

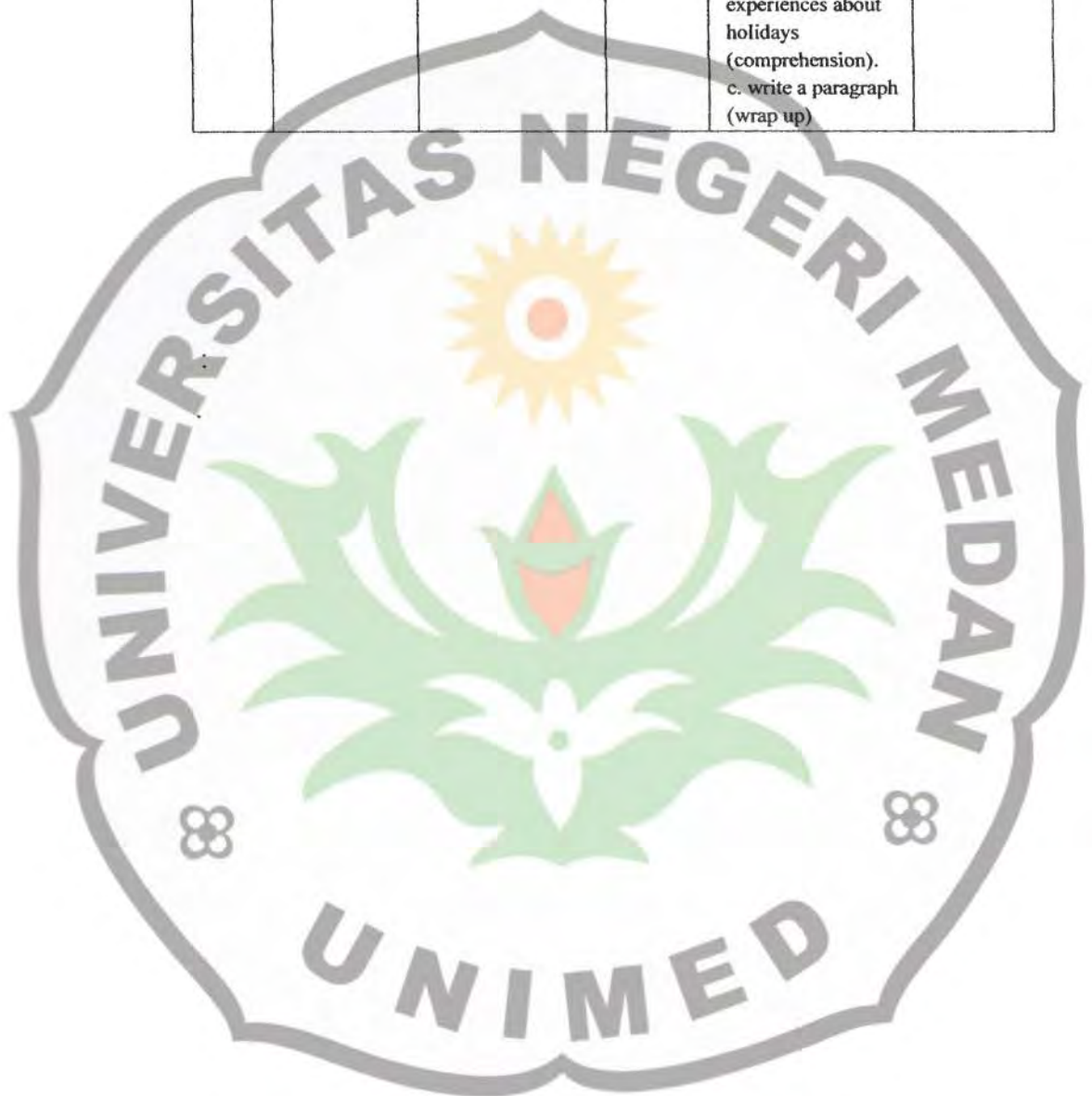
**A. General Instructional Objectives:**

After finishing this program the students are able to:

1. improve their reading comprehension using CRM
2. develop their vocabulary knowledge
3. enrich their language knowledge

Unit	Topic/Text Title	SIO (Specific Instructional Objectives)	Phase	Student's activities	Recourses
Two	Electronic Card	<p>Students are able to:</p> <ol style="list-style-type: none"> <li>1. Practice their background knowledge activation and stimulus.</li> <li>2. make list of words that related to the "Holidays"</li> <li>3. find the meaning of difficult words or phrases.</li> <li>4. mention the general idea of the text</li> <li>5. answer the detail questions.</li> <li>6. identify the main idea of the text.</li> <li>7. use their grammar knowledge for enabling task exercise.</li> <li>8. write a paragraph about their favorite holiday (what they always do in</li> </ol>	<p>Pre Reading</p> <p>While reading</p> <p>Post Reading</p>	<p>a. Do the language exercises (in group) (enabling task)</p> <p>b. Share their experiences about holidays (comprehension).</p> <p>c. write a paragraph (wrap up)</p> <p>1. Look at the picture and answer the question to anticipate the topic of the text (background knowledge activation and stimulus).</p> <p>2. Make the list of vocabulary that related to the topic</p> <p>a. read the text quickly to identify the main idea.</p> <p>b. Read the text once again more carefully to find the detail info.</p> <p>c. Complete the comprehension</p>	<p>Introductory Reading skills, by Blanchard &amp; Root Christine</p> <p>Developing Reading Skills, by L.G Alexander</p> <p>Reading comp. Exercises for Intermediate Readers, by Talok Damianus</p>

		holidays) .....		exercises (in group). a. Do the language exercises (in group) (enabling task) b. Share their experiences about holidays (comprehension). c. write a paragraph (wrap up)	
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## Lesson Plan 3

**A. General Instructional Objectives:**

- After finishing this program the students are able to:
4. improve their reading comprehension using CRM
  5. develop their vocabulary knowledge
  6. enrich their language knowledge

Unit	Topic/Text Title	SIO (Specific Instructional Objectives)	Phase	Student's activities	Recourses
Three	A Family of Magicians	<p>Students are able to:</p> <ol style="list-style-type: none"> <li>1. Practice their background knowledge activation and stimulus.</li> <li>1. make list of words that related to the "Holidays"</li> <li>2. find the meaning of difficult words or phrases.</li> <li>3. mention the general idea of the text</li> <li>4. answer the detail questions.</li> <li>5. identify the main idea of the text.</li> <li>6. use their grammar knowledge for enabling task exercise.</li> <li>8. write a paragraph about their favorite holiday (what they always do in holidays)</li> </ol>	<p>Pre Reading</p> <p>While reading</p> <p>Post Reading</p>	<ol style="list-style-type: none"> <li>a. Do the language exercises (in group) (enabling task)</li> <li>b. Share their experiences about holidays (comprehension).</li> <li>c. write a paragraph (wrap up)</li> </ol> <ol style="list-style-type: none"> <li>1. Look at the picture and answer the question to anticipate the topic of the text (background knowledge activation and stimulus).</li> <li>2. Make the list of vocabulary that related to the topic</li> </ol> <ol style="list-style-type: none"> <li>a. read the text quickly to identify the main idea.</li> <li>d. Read the text once again more carefully to find the detail info.</li> <li>e. Complete the comprehension exercises (in group).</li> <li>a. Do the language exercises (in group) (enabling task)</li> </ol>	<p>Introductory Reading skills, by Blanchard &amp; Root Christine</p> <p>Developing Reading Skills, by L.G Alexander</p> <p>Reading comp. Exercises for Intermediate Readers, by Talok Damianus</p>

				<p>b. Share their experiences about holidays (comprehension). c. write a paragraph (wrap up)</p>	
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The materials of reading for treatment at the first meeting (2x 45minutes) :

Lesson Unit Plan

**1. Background knowledge activation and Stimulus (Pre-reading)**

a. Look at the picture and answer the following questions



1. How many people are there in the picture?.
2. What are they doing?.
3. What holidays is this
4. What holidays are important for you?

a. Make list of the words you know about holidays. Share with your classmates.  
For example: 1. Party; 2.....;3.....;4.....;5.....;6.....

b. Check your answer to the question!

1. How often do you send holiday cards?

Always

Sometimes

Never

2. How often do you send birthday cards?

3. How often do you send wedding anniversary cards?.

4. How often do you get wedding cards?.

5. How often do you send graduation cards?



## ELECTRONIC CARDS

Cards are very popular in the United States. Americans send a lot of cards. They send cards to family and friends on holidays. They also send birthday cards, thank you cards, get well cards and congratulations cards. Stores sell many kinds of cards. There are cards for almost every occasion.

Do you want to send a birthday card to a friend? Do you want to send a Mother's Day card to your mother? Do you want to send a thank-you card to your neighbor? You don't have to go to a store and buy a card. You don't have to put it in an envelope. You don't have to buy a stamp and go to the post office to mail it. You can send it from your computer. Electronic cards are quick. They are easy. And best of all, they are free.

Electronic cards are fun to send and fun to receive. There are many different kinds of electronic cards. Some have sound. Some have music and cartoons. You can send electronic cards in many different languages. The next time you want to say, "Happy Birthday", "Congratulations", "Good luck", or "Get Well" you can send electronic cards. It is a fast and fun way to say "Hello" to friends and family.

### 3. Comprehension Exercises

- a. Read the text quickly and find another title for the test.
- b. Read the text once again more carefully and answer the following questions based on the information from the text.
  - b.1 Complete each of the sentences with the correct words!
    1. You sent an electronic card from a .....
      - a. computer
      - b. post-office
    2. Some electronic card have.....
      - a. stamps
      - b. music
    3. Americans sends cards on.....
      - a. holidays
      - b. stores
    4. There are many kinds of cards in.....
      - a. neighbors
      - b. stores
  - b.2 Write "T" for true and "F" for false!
    1. Cards are very popular in the United States
    2. You need to go to the post office to send electronic card.
    3. Americans send cards for many reasons.
    4. Electronic cards are fun to send and receive.
  - b.3 Circle the correct answer
    1. Electronic cards are.....
      - a. expensive
      - b. slow
      - c. free
    2. You need a.....to send an electronic card.
      - a. computer
      - b. stamps
      - c. envelope
    3. Some electronic cards have.....
      - a. music
      - b. cartoons
      - c. both *a* and *b*
    4. According to the author, electronic cards are.....
      - a. difficult
      - b. boring
      - c. fun

- b. 4 Discuss the answer of the following questions in group.
- What are the important holidays in your country?.
  - What is your favorite holiday?
  - How do you celebrate your favorite holiday?. What do you wear?. What do you eat?. What do you do?.
  - How do you write "Happy Birthday" in your language?.

**5. Enabling Task (Post –reading)**

In the following paragraphs, the verbs are all in the **simple present tense form**. Your task now is to rewrite the paragraphs by changing the verbs into the **simple past tense form**.

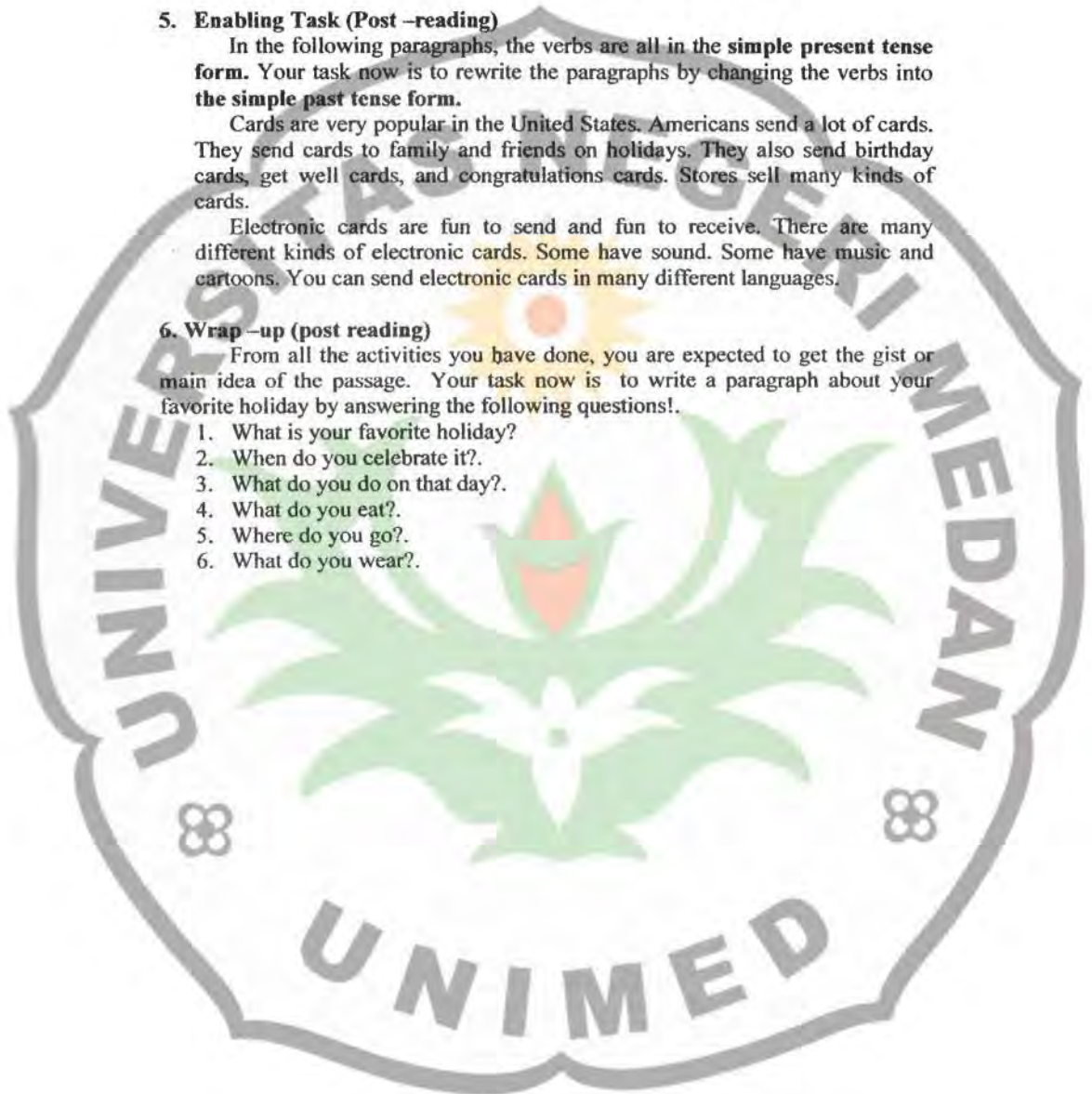
Cards are very popular in the United States. Americans send a lot of cards. They send cards to family and friends on holidays. They also send birthday cards, get well cards, and congratulations cards. Stores sell many kinds of cards.

Electronic cards are fun to send and fun to receive. There are many different kinds of electronic cards. Some have sound. Some have music and cartoons. You can send electronic cards in many different languages.

**6. Wrap –up (post reading)**

From all the activities you have done, you are expected to get the gist or main idea of the passage. Your task now is to write a paragraph about your favorite holiday by answering the following questions!.

- What is your favorite holiday?
- When do you celebrate it?.
- What do you do on that day?.
- What do you eat?.
- Where do you go?.
- What do you wear?.





The materials of reading for treatment at the second meeting (2x 45minutes) :  
Unit Two

**1. Background knowledge activation and Stimulus (Pre-reading)**

a. Look at the picture and answer the following questions!

1. How many people are in this family?.
  2. What are they doing?.
  3. Where do you think they are?.
  4. Which person is the oldest?.
  5. And which one is the youngest?.
- b. Make the list of the words you know about families. Share with your classmates!.
- Example: 1. Grandmother ; 2.....;3.....;4.....;5.....;6.....
- c. Reads the list of the words about families. Write each word in the correct column.

Add Any others words you know.

Daughter	Wife	Husband	Son
Sister	Cousin	Grandparents	Parent
Aunt	Uncle	Niece	Nephew
father	mother	child	brother

Male	Female	Male or Female
Husband		

## Reading Text

## A FAMILY OF MAGICIANS

1 Larissa and Melanie Watson are sisters. They are also twins. They are nineteen years old, and they live in Auckland, New Zealand. Larissa and Melanie are magicians. Their father is a magician. His name is Alan. Their mother Michelle is a magician too. They have an older sister. Her name is Nicole, and she is also a magician. Their great uncle, Osland Ashton, was a magician in 1920. He helped start the New Zealand society of Magicians.

2 Larissa and Melanie are famous all over the world. They have been on television many times. They do many kinds of magic tricks. In one trick, the twins take a rabbit out of a hat.

3 Larissa and Melanie have been doing magic since they were very young. When they were ten years old, they went to California. They were the youngest magicians to perform at the Magic Castle in Hollywood.

4 Larissa and Melanie have won several awards for their magic. In 1994, they won a Benny Award for the "Top Junior Entertainers" in New Zealand. In 1997, they won another award. It is called the Rising Star Award. They are very proud of these two awards. Their magician family is proud too.

## 2. Comprehension

- read the text quickly and find another title of the story
- Read once again more carefully and answer the questions below based on the information from the text.

b.1 Complete each of the sentence with the correct word.

- A.....does magic tricks.
  - rabbit
  - magician
- A king lives in.....
  - castle
  - hut.
- Larissa and Melanie are.....
  - uncles
  - twins
- The twins have won several.....
  - awards
  - magician
- Larissa and Melanie are.....around the world.
  - famous
  - youngest

b.2 Write "T" for true and "F" for false!

- .....1. Larissa and Melanie Watson are twins.
- .....2. Larissa and Melanie live in Hollywood
- .....3. Larissa and Melanie perform magic tricks.
- .....4. Larissa and Melanie never appear on TV.
- .....5. The twins parents are magicians
- .....6. The twins older is a magician..
- .....7. Nicole is younger than Larissa and Melanie.
- .....8. Larissa and Melanie are nine years old.

- b. 3 Match the items in the first column with the second column!.
- |                                     |                                       |
|-------------------------------------|---------------------------------------|
| .....1. Nicole Watson               | a. Larissa and Melanie's mother       |
| .....2. Alan Watson                 | b. Larissa and Melanie's sister       |
| .....3. Oswald Watson               | c. Larissa and Melanie's father       |
| .....4. Michele Watson              | d. Larissa and Melanie's parents      |
| .....5. Alan and Michele Watson     | e. Larissa and Melanie 's great uncle |
| .....6. Larissa, Melanie and Nicole | f. Alan and Michele daughter          |
- b. 4 Answer the following questions!
1. Where do Larissa and Melanie live?
  2. How old are Larissa and Melanie?.
  3. What do Larissa and Melanie do?
  4. Who helped start the New Zealand Society of Magicians?

### 3. Enabling Task

*Larissa and Melanie have been doing magic tricks since they were very young.*

This sentence is derived from the text. Your task now is identifying what tense is used, then make another five (5) sentences containing the same tense.

### 4. Wrap Up

Write a paragraph about your family based on the following questions!

1. How many people are there in your family?.
2. What is your father's name?.
3. What is your mother's name?.
4. Where do your parents live?.
5. How many brothers and sisters do you have?.
6. Are they older or younger than you?.
7. Are you married or single?.
8. Do you have any children?





## Appendix B

**Reading Test (for Pre test and Post test)**

Direction!

- a. It is an hour test (60 minutes) test .
- b. Read the text and questions carefully.
- c. Write the answer in your answer sheet provided.

**For number 1 – 5 read the following texts then choose the correct answer.**

## Tsunami

Tsunami occurs when a major fault under the ocean floor suddenly slips. The displaced rock pushes water above it like a giant paddle, producing powerful water waves at the ocean surface.

Tsunami waves spread out from the vicinity of the earthquake source and move across the ocean until they reach the coastline, where their height increase as they reach the continental shelf, the part of the earth's crusts that slopes, or rises, from the ocean floor up to the land.

Tsunami washes ashore with often disastrous effects, such as flooding and loss of lives due to drowning and damage to property.

1. What is the topic of the text?
  - a. The victims of tsunami
  - b. the explanation of how a tsunami occurs
  - c. a disastrous giant waves
  - d. the rising of the ocean floor
  - e. a powerful water waves
2. "Tsunami waves spread out from the vicinity of the earthquake source....."
  - a. the near distance
  - b. the log distance
  - c. the width and the length
  - d. the width
  - e. the length
3. The first paragraph shows the....of the text
  - a. general statement
  - b. explanation
  - c. closing
  - d. orientation
  - e. identification
4. The last paragraph is the.....of the text.
  - a. general statement
  - b. explanation
  - c. closing
  - d. orientation
  - e. identification

5. What is the purpose of writing the text above?
- to tell the process of how something happens
  - to deal with problematic events which lead to a crisis which in turn find a solution
  - to present information and opinions about more than one side of an issue.
  - to tell the readers that something is the case
  - to inform the readers about events of the day which is considered newsworthy

**For number 6 – 9 read the following texts then choose the correct answer.**

“Cire Perdue” is French words of Lost Wax. It is a process of wax casting used in making metal sculpture.

First, a model is coated with wax. The solidified wax is encased in a two-layer mold of plaster or clay. It is then melted or otherwise removed from the mold, and metal is poured into the space where the wax had been. After cooling, the mold is broken to free the metal object.

This ancient method is used to produce sculpture, jewelry, and utilitarian products such as dentures.

- The type of the text above is a/an.....
  - report
  - description
  - explanation
  - exposition
  - discussion
- The communicative purpose of the text above is.....
  - to inform how to make Lost wax
  - to describe Lost wax
  - tell the readers about Lost wax
  - to explain the process of the Lost Wax
  - to present how Lost Wax works
- In the second paragraph, the writer.....
  - describes Lost Wax
  - tells the two layer mold of plaster in Lost Wax
  - informs the metal object in Lost Wax
  - presents the mold and the metal in Lost Wax
  - explains the sequenced of how and why Lost Wax occurs
- The generic structure of the text on the previous page is.....
  - general statement –description of the parts-description of the qualities
  - goal-material needed-steps
  - newsworthy events-background-source
  - orientation-events-reorientation
  - general statement-sequenced explanation of how, why- closing

For number 10 – 13 read the following texts then choose the correct answer.

**What Causes Weather?**

Weather is the physical condition of the atmosphere at a particular time. It includes temperature, air pressure and water content.

Weather is produced when air moves from place to place. This moving air is known as wind. Winds are caused by warm air rising and cooler air moving to replace it. Warm air is usually less dense than cool air; therefore, it creates low air pressure. Cool air is more dense and creates high pressure.

Usually we have fine weather when the air pressure is high, and we will have clouds, rain or snow when air pressure drops.

5. What is the purpose of the text?
  - a. to retell about weather
  - b. to explain the process of the formation of weather
  - c. to describe the steps of the formation of weather
  - d. to describe about weather
  - e. to persuade people about the formation of weather
6. When do we find good weather?
  - a. when air moves from place to place
  - b. when there is moving air
  - c. when warm air is less dense than cool air
  - d. when air pressure drops
  - e. when the air pressure is high
7. Then following statements are true except.....
  - a. a physical condition of the atmosphere at a particular time is called weather.
  - b. Air movement from place to place causes weather
  - c. The moving air is called wind
  - d. Warm air is usually more dense than cool air
  - e. When air pressure drops we usually have clouds
8. "Cool air is denser and creates high pressure".  
The synonym of the underlined word is.....
  - a. compact
  - b. solid
  - c. slow
  - d. low
  - e. crowded

For number 14 – 17 read the following texts then choose the correct answer.

**112 Die in France from July heat Wave**

A heat wave that struck Europe last month killed 112 people in France, on Thursday, many of them were elderly. Of the people whose deaths were attributed to the sweltering temperatures in France, 66 of them were age 75 or up. French officials said, "This year people must be more careful to avoid a repeat of the summer of 2003, when 15,000 people, most of them elderly, died of heat related causes".



9. Who suffered a lot from the heat wave?
- young people
  - Old people
  - Children
  - Women
  - Teenagers
10. Why were the French officials said that people must be more careful about this year heat wave?
- because the present condition is better
  - because the present condition is worse than that in 2003
  - because in 2003 more people had died
  - because they didn't want more people die
  - because they were responsible for the citizen's safety
16. "Of the people whose deaths were attributed to the sweltering temperatures.....".  
The underlined word has almost the same meaning as the word.....
- due to
  - comply with
  - associate with
  - in response to
  - for the sake of
17. What is the newsworthy event of text above?
- French official said "This year people must be more careful to avoid a repeat of the summer of 2003".
  - A heat wave that struck Europe last month killed 112 people in France on Thursday, many of them were elderly.
  - Of the people whose deaths were attributed to the sweltering temperatures in France, 66 of them were age 75 or up.
  - Many of them were elderly.
  - When 15,000 people, most of them elderly, died of heat related causes.

For number 18 – 25 read the following texts then choose the correct answer.


#### The Digestive System

Human body is made up of countless millions of cells. Food is needed to build up new cells and replace the worn out cells. However, the food that we take must be changed into substances that can be carried in the blood to the places where they are needed. This process is called digestion.

The first digestive process takes place in the mouth. The food we eat is broken up into small pieces by the action of teeth, mixed with saliva, a juice secreted by glands in the mouth. Saliva contains digestive juice moisten the food, so it can be swallowed easily.

From the mouth, food passes through the esophagus (the food passage) into the stomach. Here, the food is mixed with the juices secreted by the cells in the stomach for several hours. Then the food enters the small intestine. All the time the muscular walls of the intestine are squeezing, mixing and moving the food onwards.

In a few hours, the foods change into acids. These are soon absorbed by the villi (microscopic branch projections from the intensive walls) and passed into the bloodstream.

18. What is "digestion" mean?
    - a. The process of building up new cells
    - b. the process of taking food into our mouth
    - c. The process of replacing worn out cells
    - d. The process of providing energy for each cell
    - e. The process of changing food into substances that can be carried in the blood
  19. What is the first digestive juice?
    - a. Enzymes
    - b. Glands
    - c. Intestine
    - d. Saliva
    - e. Esophagus
  20. "The digestive system begins as soon as we put the food into the mouth"  
This information can be found in paragraph.....
    - a. one
    - b. two
    - c. three
    - d. four
    - e. five
  21. The text above is called a/an.....
    - a. description
    - b. explanation
    - c. exposition
    - d. report
    - e. review
  22. The first paragraph of the text above is called.....
    - a. issue
    - b. thesis statement
    - c. orientation
    - d. re-orientation
    - e. general statement
  23. "These are soon absorbed by the villi....."
    - a. Foodstuffs
    - b. villi
    - c. acids
    - d. juices
    - e. cells
  24. Food is needed to build up new cells and replace the worn out .....
    - a. Cells
    - b. Enzymes
    - c. Glands
    - d. Intestine
    - e. acids
- 

25. The food consumed must have a balance of carbohydrate, vegetables, protein, minerals and.....

- a. Meat
- b. Fish
- c. vitamins
- d. milk
- e. supplement





**APPENDIX C:** The score of Pre-test and Post-test by the students of the experimental and control group.

**A.** The Score of Pre-test and Post test by the students of the Experimental Group

No	Respondents' Number	Score of Pre Test	Score of Post Test
(1)	(2)	(3)	(4)
1	01	52	64
2	02	56	76
3	03	56	60
4	04	56	68
5	05	56	72
6	06	60	72
7	07	56	76
8	08	60	76
9	09	56	68
10	010	72	80
11	011	56	68
12	012	64	76
13	013	68	80
14	014	48	56
15	015	72	84
16	016	56	60
17	017	76	84
18	018	60	72
19	019	68	84
20	020	56	72
21	021	60	72
22	022	60	76
23	023	56	68
24	024	64	76
25	025	48	64
26	026	68	84
27	027	60	72
28	028	60	68
29	029	68	80
30	030	76	88
<b>TOTAL (<math>\Sigma</math>):</b>		1824	2196
<b>Mean:</b>		<b>60.8</b>	<b>73.2</b>

$$\text{Mean} = \bar{X} = \frac{\sum X}{N} = \frac{2196}{30} = 73,2$$

The score of Pre-test and Post - test of group B (The Control Group)

No	Respondents' Number	Score of Pre Test	Score of Post Test
(1)	(2)	(3)	(4)
1	01	52	60
2	02	60	72
3	03	56	64
4	04	60	64
5	05	56	60
6	06	48	56
7	07	60	64
8	08	56	68
9	09	64	72
10	010	48	52
11	011	72	76
12	012	48	60
13	013	68	72
14	014	48	60
15	015	64	72
16	016	56	60
17	017	60	72
18	018	56	64
19	019	68	68
20	020	52	64
21	021	52	60
22	022	48	64
23	023	52	52
24	024	52	60
25	025	60	64
26	026	60	68
27	027	48	60
28	028	64	68
29	029	56	64
30	030	60	72
<b>TOTAL (<math>\Sigma</math>):</b>		1704	1932
<b>Mean:</b>		56,8	64,4

$$\text{Mean} = \bar{X} = \frac{\sum X}{N} = \frac{1932}{30} = 64,4$$

**APPENDIX D: The Calculation of the Reliability of the Test**

No of the Students	Score	Squared Score ( $X^2$ )
01	14	196
02	12	144
03	15	225
04	15	225
05	13	169
06	10	100
07	17	289
08	11	121
09	13	169
010	17	289
011	11	121
012	18	324
013	12	144
014	13	169
015	17	289
016	12	144
017	10	100
018	16	256
019	14	196
020	16	256
021	11	121
022	13	169
023	12	144
024	15	225
025	16	256
026	13	169
027	10	100
028	12	144
029	15	225
030	14	196
Total	407	5675
Means	13.6	189.16

$$SD = \frac{\sqrt{\sum(X^2)}}{N}$$

$$= \frac{\sqrt{5675}}{30}$$

$$= \frac{75,33}{30}$$

$$= 2.51$$

$$SD^2 = 6.3$$



To obtain the reliability of the test, it is used the Kuder Richardson Method Formula 21

(KR-21) as follows:

$$M = 13.6$$

$$K = 25$$

$$S = 6.3$$

$$\begin{aligned} r &= \left[ \frac{k}{k-1} \right] \left[ 1 - \frac{M(k-M)}{k(S)^2} \right] \\ &= \left[ \frac{25}{25-1} \right] \left[ 1 - \frac{13,6(25-13,6)}{25(6,3)^2} \right] \\ &= \left[ \frac{25}{24} \right] \left[ 1 - \frac{13,6 \cdot (11,4)}{25(39,69)} \right] \\ &= \left[ \frac{25}{24} \right] \left[ 1 - \frac{155,04}{992,25} \right] \\ &= [1,04][1 - 0,156] \\ &= 1,04 \times 0,844 \\ &= 0,88 \end{aligned}$$

**Appendix E:** The Calculation of mean (Mean), Variance ( $S^2$ ) of the control and experimental Group.

A. Control Group Pre test

Class Interval	Fi	Xi	(Xi-M)	(Xi-M) <sup>2</sup>	Fi (Xi-M) <sup>2</sup>
70-72	1	71	14.2	201.64	201.64
67-69	2	68	11.2	125.44	250.88
64-66	3	65	8.2	67.24	201.72
61-63	0	62	5.2	27.04	0
58-60	7	58	1.2	1.44	10.08
55-57	6	56	-0.8	0.64	3.84
52-54	5	53	-3.8	14.44	72.2
49-51	0	50	-6.8	46.24	0
46-48	6	47	-9.8	96.04	576.24
43-45	0	44	-12.8	163.84	0
40-42	0	41	-15.8	249.64	0
	30				1316.6

$$\sum Yi = 1704$$

$$n = 30$$

$$\bar{X} = \frac{\sum Y_i}{30} = \frac{1704}{30} = 56,8$$

$$S^2 = \frac{\sum F_i(X_i - \bar{X})^2}{N-1} = \frac{1316,6}{30-1} = \frac{1316,6}{29} = 45,4$$

### B. Experimental Group Post-Test

Class Interval	F <sub>i</sub>	X <sub>i</sub>	(X <sub>i</sub> -M)	(X <sub>i</sub> -M) <sup>2</sup>	F <sub>i</sub> (X <sub>i</sub> -M) <sup>2</sup>
88-90	1	89	15.8	249.64	249.64
85-87	0	86	12.8	163.84	0
82-84	4	83	9.8	96.04	384.16
79-81	3	70	-3.2	10.24	30.72
76-78	5	77	3.8	14.44	72.2
73-75	0	74	0.8	0.64	0
70-72	6	71	-2.2	4.84	29.04
67-69	5	68	-5.2	27.04	135.2
64-66	2	65	-8.2	67.24	134.48
61-63	2	62	-11.2	125.44	250.88
58-60	1	59	-14.2	201.64	201.64
55-57	1	56	-17.2	295.84	295.84
	30				1783.8

$$\sum X = 2196$$

$$n = 30$$

$$\bar{X} = \frac{\sum X_i}{30} = \frac{2196}{30} = 73,2$$

$$S^2 = \frac{\sum F_i(X_i - \bar{X})^2}{N-1} = \frac{1783.8}{30-1} = \frac{1783.8}{29} = 61,51$$

From the data above , it is obtained that:

The Highest sample variance = 61,51

The Lowest sample variance = 45,4

$$F = \frac{S_g}{S_i}$$

$$= \frac{\text{Variance of the control group}}{\text{Variance of the experimental group}} = \frac{45,4}{61,51} = 0,73$$

F value = 0,73

### Appendix F: The Calculation of t-test

#### A. Control Group.

Respondents' Number	Pre Test	Post Test	T-T (d)	Squared Deviation (d <sup>2</sup> )
01	52	60	8	64
02	60	72	12	144
03	56	64	8	64
04	60	64	4	16
05	56	60	4	16
06	48	56	8	64
07	60	64	4	16
08	56	68	12	144
09	64	72	8	64
010	48	52	4	16
011	72	76	4	16
012	48	60	12	144
013	68	72	4	16
014	48	60	12	144
015	64	72	8	64
016	56	60	4	16
017	60	72	12	144
018	56	64	8	64
019	68	68	0	0
020	52	64	12	144
021	52	60	8	64
022	48	64	16	256
023	52	52	0	0
024	52	60	8	64
025	60	64	4	16
026	60	68	8	64
027	48	60	12	144
028	64	68	4	16
029	56	64	8	64
030	60	72	12	144
Total	1704	1932	228	2192
Mean	56.8	64.4	7.6	

$$Mb = \frac{\sum d}{n} = \frac{228}{30} = 7,6$$



## B. Experimental Group

Respondents' Number	Pre Test (T)	Post Test (T)	T-T (d)	Squared Deviation (d <sup>2</sup> )
01	52	64	12	144
02	56	76	20	400
03	56	60	4	16
04	56	68	12	144
05	56	72	16	256
06	60	72	12	144
07	56	76	20	400
08	60	76	16	256
09	56	68	12	144
010	72	80	8	64
011	56	68	12	144
012	64	76	12	144
013	68	80	12	144
014	48	56	8	64
015	72	84	12	144
016	56	60	4	16
017	76	84	8	64
018	60	72	12	144
019	68	84	16	256
020	56	72	16	256
021	60	72	12	144
022	60	76	16	256
023	56	68	12	144
024	64	76	12	144
025	48	64	16	256
026	68	84	16	256
027	60	72	12	144
028	60	68	8	64
029	68	80	12	144
030	76	88	12	144
Total	1824	2196	372	5040
Average	60.8	73.2	12.4	

$$Ma = \frac{\sum d}{N} = \frac{372}{30} = 12,4$$

**Appendix G.1 : The Calculation of t-test**

**A. Control Group**

<b>Respondents' Number</b>	<b>T2-T1 (d)</b>	<b>d -Mb</b>	<b>db<sup>2</sup></b>
01	8	0.4	0.16
02	12	4.4	19.36
03	8	0.4	0.16
04	4	-3.6	12.96
05	4	-3.6	12.96
06	8	0.4	0.16
07	4	-3.6	12.96
08	12	4.4	19.36
09	8	0.4	0.16
010	4	-3.6	12.96
011	4	-3.6	12.96
012	12	4.4	19.36
013	4	-3.6	12.96
014	12	4.4	19.36
015	8	0.4	0.16
016	4	-3.6	12.96
017	12	4.4	19.36
018	8	0.4	0.16
019	0	-7.6	57.76
020	12	4.4	19.36
021	8	0.4	0.16
022	16	8.4	70.56
023	0	-7.6	57.76
024	8	0.4	0.16
025	4	-3.6	12.96
026	8	0.4	0.16
027	12	4.4	19.36
028	4	-3.6	12.96
029	8	0.4	0.16
030	12	4.4	19.36
<b>Total</b>	<b>228</b>		<b>459.2</b>
<b>Mean</b>	<b>7.6</b>		

## B. Experimental Group

Respondents' Number	T-T (d)	d -Mb	db <sup>2</sup>
01	12	-4.4	19.36
02	20	-0.4	0.16
03	4	-4.4	19.36
04	12	-8.4	70.56
05	16	-8.4	70.56
06	12	-4.4	19.36
07	20	-8.4	70.56
08	16	-0.4	0.16
09	12	-4.4	19.36
010	8	-8.4	70.56
011	12	-8.4	70.56
012	12	-0.4	0.16
013	12	-8.4	70.56
014	8	-0.4	0.16
015	12	-4.4	19.36
016	4	-8.4	70.56
017	8	-0.4	0.16
018	12	-4.4	19.36
019	16	-12.4	153.76
020	16	-0.4	0.16
021	12	-4.4	19.36
022	16	3.6	12.96
023	12	-12.4	153.76
024	12	-4.4	19.36
025	16	-8.4	70.56
026	16	-4.4	19.36
027	12	-0.4	0.16
028	8	-8.4	70.56
029	12	-4.4	19.36
030	12	-0.4	0.16
Total	372		1150.4
Mean	12.4		

Where:

$$Ma = 12,4$$

$$da^2 = 1150,4$$

$$Na = 30$$

$$Mb = 7,6$$

$$db^2 = 459,2$$

$$Nb = 30$$



$$\begin{aligned}
 t &= \frac{Ma - Mb}{\sqrt{\left(\frac{da^2 + db^2}{Na + Nb - 2}\right)\left(\frac{1}{Na} + \frac{1}{Nb}\right)}} \\
 &= \frac{12,4 - 7,6}{\sqrt{\left(\frac{1150,4 + 459,2}{30 + 30 - 2}\right)\left(\frac{1}{30} + \frac{1}{30}\right)}} \\
 &= \frac{4,8}{\sqrt{\left(\frac{1609,6}{58}\right)\left(\frac{2}{30}\right)}} \\
 &= \frac{4,8}{\sqrt{(27,75)(0,07)}} \\
 &= \frac{4,8}{1,39} \\
 &= 3,45
 \end{aligned}$$

#### Appendix G.2:

Homogeneity of the Two Groups

Homogeneity (f)

$$\begin{aligned}
 F &= \frac{Sg}{Si} \\
 &= \frac{\text{Variance of the control group}}{\text{Variance of the experimental group}} = \frac{45,4}{61,51} = 0,73
 \end{aligned}$$

$$F_{\text{value}} = 0,73$$

