APPENDICES

THE PASSAGE FOR TREATMENT 1

Healthy House Construction

Once you understand the basic concepts, healthy house construction is no more difficult than unhealthy house construction. However, it does involve more than just selecting non-toxic materials. It also requires an understanding of how a house functions-for example how a house 'breathes' naturally (and why that may not be desirable), and how heating and ventilating systems interact. There are some considerations to make in designing and constructing a house that will not make the occupants sick.

Site selection is the first consideration in healthy house construction because if the outdoor air quality is poor, then the indoor air quality will also be poor. It is possible to install filtration equipment to clean all of the air indoors, but this can be expensive. While filtration may be necessary in some instances, it is often easier to build in an unpolluted area in the first place. Remember; do build in a clean locale.

People need fresh air. Mechanical ventilation can supply that air at the correct rate whenever it is required. Relying on filtration for the occupants' air supply is unreliable at best and more often than not, insufficient. So, so install a sufficient ventilation system.

Kitchen and bathroom cabinets are not only made of manufactured wood products that contain glues high in formaldehyde (medium density fiber board, particle board, hardwood plywood) but they are also coated with a very potent 'acid catalyzed' formaldehyde finish. The finish has very high emissions for 6-12 months, after which levels decrease significantly. The emissions from the formaldehyde base glues have half-lives of several years. Custom made a baked-on finish are better choices.

In general, water based products are more benign than solvent based products because they have lower levels of volatile organic chemicals (VOCs). However, they are not perfect because there are ingredients besides VOCs that can be responsible for negative health effects. For those interested in even healthier products, several specialty manufactures are now offering alternative materials that are more benign than off-the-shelf products. If solvent-based products must be used for some reason, plenty of ventilation is mandatory to minimize exposures. Extra ventilation is recommended with water based products. Therefore, it is better for us to use water based adhesives, caulks, paints, etc.

(Adapted from *www. house and home.com*)

THE PASSAGE FOR TREATMENT 2

Birth Control

Throughout history people have recognized that the earth would become overpopulated if they couldn't prevent conception. In the past, workers in the field of birth control always thought hard to find an effective method in family panning. The result of their work was simple; effective family planning is found in good and easy access to obtain contraceptive methods. But this idea was only partly true. Experts in family planning finally found out that human error contributes greatly to the effectives of any form of birth control.

Researchers have found that the effectiveness of a contraceptive method is related to the motivation of the couple who are using it. Couples who are trying to limit the size of their families will be successful in the use of contraception methods.

The important things to consider in using birth control methods are: 1) no matter how effective birth control methods are in the theory, you must use them consistently, 2) it is important for you to understand how the methods work and how to use the method correctly. Birth control methods can be grouped into two categories: methods requiring no medical care and methods requiring medical care. Birth control methods which are available without medical care are condoms, foams, jellies, and creams. While methods which are available with medical care ar, oral contraceptives, intrauterine devices, and natural family planning.

A condom is a thin rubber or natural skin sheath and has been widely used throughout the world for centuries. It is also known as the leading mechanical method of birth control in the world. Condoms cause no harmful physical side effects, and they are the only form of contraception that definitely helps prevent the spread of sexually diseases. With the present epidemic of the diseases, condoms are important for sexually active men and women.

Like condoms, foams, creams, and jellies are useful for individuals who require a portable, simple, inexpensive, non-medical method, that can be used as they want to. There are no harmful side effects with these methods with the possible exception of the women who have allergic reactions. But these reactions can usually be avoided by changing brands.

Oral contraceptive' the pill' was first used in 1960. Most forms of the pill introduce into the body certain synthetic equivalents of the natural sex hormones, in such a way that the hormone cycle that leads the woman's body to ovulate is altered and ovulation is prevented. The pill has many serious side effects, including blood clots, increased risk of heart attack, and for users between the ages of fifteen and thirty-four, about 8 times greater risk of death due to circulatory disorders compared to those who do not use the pill.

Intrauterine devices (IUDs) are devices made of soft, flexible plastic, produced in various sizes and shapes. They are inserted into uterus by a physician. They do not prevent ovulation, but it is thought that they interfere in some ways with the implantation of a fertilized egg in the lining of the uterus.

(Adapted from *Life and Health*)

THE PASSAGE FOR TREATMENT 3

The Basic Components of Food

All foods are composed of chemical compounds. During the process of digestion, our bodies break these compounds into simpler ones and then reassemble them into other kinds of chemicals that can be directly used by the body. There are four basic groups of chemicals in the foods we eat: (1) protein, (2) carbohydrates, (3) fat and (4) vitamins and minerals.

Protein, found in meat, eggs, dairy product and some other foods, is important for growth and repair of the body. The body uses protein to build muscle, hair, teeth, nails, bones, nerve cells, hemoglobin and enzymes. There are also special proteins, knows as nucleic acids, in the nuclei of all the cells in your body. Protein is made up of twenty-two different amino acids, 'the building blocks' of the body. Of these twenty-two, eight are called essential amino acids because the body cannot produce them. You must get them directly in your food. The body can make the other fourteen amino acids.

All eight essential amino acids must be present in your body at the same time in order for the body to form protein. Since free amino acids cannot be stored in the body, this means that you must consume the eight essential acids at approximately the same time-preferably at the same meals-for your body to use them.

Carbohydrates, found in spaghetti, bread, cereal, rice, potatoes, candy, most fruits and vegetables and other foods, are our source of ready energy. They contribute approximately 50 percent of the body's energy needs and are its most economical energy source. They include two major types: sugars and starches.

Fat has gotten bad reputation recently-yet fat in the diet is essential to good health. Besides serving as an additional energy source, fats-also known as lipids-give flavor and juiciness to many of the foods we eat. Fats also insulate the body, protect vital organs, protecting them from injury, serve as carries for the four fat-soluble vitamins (A,D,E, and K) and contribute to hormone synthesis and the blood clotting mechanism. Unused fats, like extra carbohydrates, are stored as 'fat tissue' and drawn on by the body when they are needed for energy. Stored fats are the greatest nutritional reservoir in the body.

Vitamins, along with minerals, are often referred to as 'micronutrients' because they are required in only trace amounts. Yet they are needed in moving vital bodily functions. Vitamins do not form new compounds in the body, as proteins, carbohydrates and fats do. Rather, they help other chemical reactions to take place. For example, vitamin D is necessary for calcium to become part of the bone structure.

(Adapted from *Life and Health* 1984)

Individual quiz for treatment 1

1. When is healthy house construction no more difficult?
   a. people select non-toxic materials to build a healthy house
   b. people have understood the basic concepts to build a healthy house
   c. people understand of how a house function
   d. people consider of how to build a healthy house
2. What do the two words 'it' in paragraph 1 refer to?
   a. basic concepts ; healthy house
   b. healthy house ; basic concepts
   c. basic concepts ; basic concepts
   d. healthy house ; healthy house
3. A house breathes naturally. What is the clause meant?
   a. the house can get enough outdoor air
   b. the temperature in the house is not too hot
   c. the house looks natural
   d. the house build on the natural area
4. What will happen if the outdoor air quality is poor?
   a. the indoor air quality will be sufficient
   b. the indoor air quality will be more poor
   c. the indoor air quality is not balance
   d. the indoor air quality will also be poor
5. '....but this can be expensive' (P.2). What does the statement mean?
   a. if we want to clean all the air indoors, it will be more expensive
   b. if we want to install filtration equipment, it will spent a lot of money
   c. if we want good indoor air quality, it will need much money
   d. A lot of money is needed in order to get good air filtration
6. What is the main idea of paragraph 2?
   a. the first consideration of a healthy house construction is the outdoor air quality
   b. we need filtration equipment to clean all the air indoors
   c. site selection is important consideration in healthy house construction
   d. constructing a house in an unpolluted area is easier than in a polluted area
7. Why is sufficient ventilation needed in designing a healthy house?
   a. people need fresh air
   b. outdoor air is needed by the occupants
   c. it can supply enough air
   d. infiltration can supply air for the occupants
8. What is the main idea of paragraph 4?
   a. product that contain a high-tox finish is not good for health
   b. products with low-tox finish are better choices

c. kitchen and bathroom cabinets are coated high-tox finish

d. kitchen and bathroom cabinets are not better choices

9. ...because they have lower levels of...(P 3). What does the underlined word refer to?

a. water based products

b. solvent based products

c. volatile organic chemicals (VOCs)

d. ingredients

10. What should we do if solvent based products must be used for some reason?

a. build a house on the clean locale

b. extra ventilation is not needed

c. add more ventilation

d. buy alternative materials

Individual Quiz for treatment 2

1. Contraception is devices and methods for
    a. preventing pregnancy
    b. stimulate conception
    c. preventing disease transmission
    d. limiting family size
2. What does 'their' in 'The result of *their* work was simple:..' refer to?(p1)
    a. experts
    b. workers
    c. people
    d. methods
3. What contributes to the effectiveness of any form of birth control?
    a. human error
    b. experts
    c. contraceptive
    d. family planning
4. The effectiveness of contraceptive is related to
    a. user's understanding
    b. user's consistency
    c. user's motivation
    d. user's capability
5. What does paragraph 3 tell us about?
    a. considerations in using birth control
    b. there are two categories of birth control
    c. kind of no medical care
    d. kind of medical care
6. Some method are available with medical care, except
    a. oral contraceptive
    b. intraurine devices
    c. natural family planning
    d. condoms
7. What is a physical side effect of condoms?
    a. spread of sexually transmitted diseases
    b. no side effect
    c. heart attack
    d. allergic reaction
8. What will happen if there is no birth control?

a. population is decrease

b. population is increase

c. birth rate is low

d. birth rate is stabile

9. What is the main idea of paragraph 6?

a. pill was first use in 1960

b. side effects of using oral contraceptive

c. process and side effects of pill

d. pill has many serious side effects

10. We can conclude that

a. medical care has more side effects than non medical care

b. the side effects of pill are more serious than IUDs

c. condoms are better than pill

d. condoms are the best method

Individual Quiz for treatment 3

1. What is the main idea of the 1st paragraph?
    a. four basic group of chemical in the food
    b. all food are composed of chemical compounds
    c. kinds of chemical compound
    d. the process of digestion
2. Where do people get essential amino acids?
    a. food
    b. protein
    c. dairy product
    d. body
3. How many essential amino acids are required by our body?
    a. twenty-two
    b. fourteen
    c. eight
    d. thirty
4. What does paragraph 3 tells us about?
    a. eight essential amino acids are made up of protein
    b. protein is made up of eight essential amino acids
    c. eight essential amino acids must be consumed at the same time
    d. the body can not make eight essential amino acids
5. "....for your body to use <u>them</u>". 'them' refers to....(p2)
    a. meals
    b. protein
    c. food
    d. free amino acids
6. Which statement below is false?
    a. we can acquire carbohydrates from bread, cassava, fruits and vegetables
    b. carbohydrate contributes about a quarter of our body's energy needs
    c. carbohydrates are most economical energy source.
    d. carbohydrates can be found in candies
7. Fat has gotten a bad reputation. It means that...
    a. fat can be dangerous for our health
    b. fat is essential for our health
    c. fat protect our body from injury
    d. fat is not essential
8. "...<u>repair of</u> the body"(p2). The underlined phrase means..
    a. tired
    b. protect

c. made up

d. rebuild

9. Why are vitamins referred to as micronutrients?

a. they are required in little amount

b. they are along with the minerals

c. they are moving vital bodily functions

d. they are do not form new compounds in the body

10. Which statement is true?

a. vitamins form new compounds in the body

b. vitamins help the reactions of other chemical

c. vitamins do as other chemicals do

d. vitamins is needed for energy

THE PRETEST AND POSTTEST SHEETS

Text 1

In many countries filth, poor sanitation and bad health are usually found together. When there is filth, there are a lot of files, rats and other disease carries that can cause bad health. When the sewerage system in a community does not work well, water taken from the wells may be dirty and may not be good for drinking. As a result, bad health will affect the community.

In many countries, communities have adopted laws in order to get pure water, sufficient plumbing and sewage, garbage disposal and clean street laws are also adopted to reduce air pollution and to inspect eating places and public inns. Yet fight against filth and poor sanitation must go on. This is a campaign in which all of us must take part. Public health is the concern of everyone.

In Indonesia almost all communities both in cities and in the villages have good traditions. On Sunday morning when we pass through a village, we often see people taking a part in making their surrounding clean. They clean ditches, pull up unwanted grass, collect garbage, and plant young trees; they want to make the surrounding healthy, clean and neat. By doing this together they expect that all members of the village can live healthily. This tradition must be kept.

However, there are still some people who do not know how important clean surroundings are. They throw away garbage into irrigation canals, streams and rivers. They throw away a lot of poisonous waste from the factories into the rivers. As a result, people can not use the water from the polluted rivers. A lot of fish and other animals are killed. The fight for clean environment must go on.

1. The word "filth" in paragraph 1 nearly means.... (5 points)
a. garbage
b. germs
c. dirt
d. pollution

2. Who must be responsible for public health? (5 points)
a. poor people
b. the government
c. everyone
d. city communities

3. What is the good tradition of communities in the cities and in the village? (5 points)
a. cleaning ditches
b. making their environment clean
c. pulling up unwanted garbage and planting young trees
d. collecting garbage

4. What is the main idea of paragraph 4? (5 points)
a. There are still some people who make environment dirty
b. People still throw away garbage into the river
c. Factories discharge poisonous wastes into the river
d. The fight for a clean environment must go on.

5. The communities will have a healthy life and clean environment if...(5 points)
a. each people has responsibility to keep the cleanliness of their environment
b. both cities and villages have good tradition to keep the environment clean
c. the factories do not throw away their poisonous waste into the river

d. there is strict law in the community

6. The passage is concerned with... (5 points)
a. Indonesia is a filth country
b. keep clean environment
c. good tradition to keep clean environment
d. rivers pollution

Text 2

Lowering births is the unambiguous object of government policy, especially in the developing countries. Increasing populations press on the environment and its resources, take away profits from the capital available for new investment, crowd cities with 5 people for whom jobs are not available, and cause political turmoil. After a period of uncertainty government have become aware that national power and individual welfare are more likely to be attained with fewer people.

Contraceptive measures are freely available in most countries and are actively promoted in many. Such promotion has little effect when people want large families. However, when the modern ways of life have come into play and people want small families promotion or birth control speeds the decline of the birth rate.

Typically, the better-off take up family limitation first. Governmental sponsorship of birth control and foreign aid makes contraceptives available to the poor. This apparently helps to spread the practice of family limitation among ever-wider strata of the population.

Recent surveys in Columbia, Indonesia, and other places with active programs, point to a more rapid decline in birthrates than had previously been thought possible

7. The best title of the text is(5 points)
a. Birth Control
b. Family Limitation
c. Lowering Birth
d. Family Planning

8. What is likely achieved by the government with fewer people? (5 points)
a. national power and political turmoil
b. individual welfare and lack job
c. national power and individual welfare
d. available job and political disorder

9. What will happen if the birth rate is still increase? (5 points)
a. a lot of poor families
b. national power and individual welfare can be easily achieved
c. there is no job available for five people
d. the country can not develop well

10. Who takes family limitation first? (5 points)
a. small families
b. poor families
c. families with modern ways of life
d. large families

11. The first paragraph tells us about... (5 points)
a. lowering birth is the unambiguous object of government in order to develop the country
b. increasing populations press on the environment and its resources and cause political turmoil

c. government have become aware that national power and individual welfare are more likely to be attained with fewer people
d. lowering birth take away profits from the capital available for new investment

12. "...a more rapid decline...."(par. 4). (5 points)
The underline word means....
a. control
b. fast
c. move
d. stop

13. The aim of Family Planning is... (5 points)
a. to increase of the birth rate
b. to increase of the death rate
c. to decline of the death rate
d. to decline of the birth rate

14. "This apparently helps..." (par. 3) (5 points)
"this" refers to...
a. family limitation
b. birth control
c. poor family
d. governmental sponsorship

Text 3

There are several important things we must in order stay healthy. One of them is that we must eat enough quantities of nutritious food. Good food is very important for keeping our body healthy. Food which contains a lot of nutrients is always good for our body. Nutrients are of live important groups; proteins carbohydrates, fats, minerals and vitamins. Our body needs proteins for its growth. Therefore, proteins are the most important nutrients for young people. Proteins also rebuild worn-out body tissues. We can acquire proteins from meat, chicken, peas, beans, coconuts, eggs and milk.

Carbohydrates are as important as proteins, because they are the main source of energy. The body needs energy to do its work. Carbohydrates are found in bread, cakes, rice, potatoes, cassava, corn, sugar and sweets.

Fat are other important sources of energy. We can find fats in butter, margarine, milk, coconut-milk, eggs, fish meat, and ice cream. However, too much fat can make our body fat and this is dangerous for our heart. It can cause heart attacks.

Minerals salts such as calcium, magnesium, phosphorus, and iron are also absolutely necessary for our body. For instance, calcium, magnesium, phosphorus are necessary for the growth of our bones and teeth. Iron is import6ant for our blood.

Vitamins are important for our health. The body can not make its own vitamins, so it depends on our food for these. We must eat food which contains a lot of vitamins, such as vegetable and fruit. They help the body to absorb other nutrients in food. Vitamins control our digestion.

15. Which of the statements below is true according to text? (5 points)
a. nutrients contain food
b. protein are not needed by our body
c. vitamins are important for our blood
d. nutritious food is very important for keeping our body healthy

16. "They help the body to observe...." (par.5) (5 points)
The word "they" refers to...

a. the body
b. contains
c. vitamins
d. vegetable and fruit

17. The importance of carbohydrate for our body. This statement is the main idea of paragraph....(5 points)
a. 1
b. 2
c. 3
d. 5

18. Too much .... Is not really good for our health especially our heart (5 points)
a. fat
b. protein
c. carbohydrates
d. mineral

19. The text is about...(5 points)
a. the nutritious food needed by our body
b. the source of food
c. the important things for people to grow well
d. kind of nutrients

20. "Protein also rebuilds worn-out body tissues" (par.1)
The underline phrase means....(5 points)
a. tired
b. broken
c. repaired
d. damaged

THE CALCULATION OF RELIABILITY

No	X
1	11
2	12
3	18
4	13
5	4
6	11
7	11
8	19
9	13
10	12
11	9
12	18
13	11
14	12
15	10
16	11
17	19
18	10
19	10
20	12
21	17
22	16
23	13
24	12
25	11
26	6
27	5
28	11
29	9
30	14
31	10
32	4
33	11
34	5
35	10
36	13
37	9
38	9
39	11
40	6
Total	**448**
M	**11.2**
SD	**3.85**

$$M = \frac{\Sigma x}{n} = 11.2$$

$$SD = \frac{\text{sum of high sixth} - \text{sum of low sixth}}{\text{half number of students}} = 3.85$$

$$KR21 = \frac{1 - M - (K - M)}{K(s^2)} = 0.668$$

Where,

M = the mean score

K = the number of items in the test

S = standard deviation of the test scores

THE CALCULATION OF DIFFICULTY INDEX AND DISCRIMINATION POWER

Item No.	Difficulty Index	Discrimination Index
1.	$FV = \frac{15}{40} = 0.375$	$D = \frac{11-4}{10} = 0.70$
2.	$FV = \frac{34}{40} = 0.85$	$D = \frac{20-14}{10} = 0.60$
3.	$FV = \frac{26}{40} = 0.65$	$D = \frac{16-10}{10} = 0.60$
4.	$FV = \frac{18}{40} = 0.45$	$D = \frac{14-4}{10} = 1$
5.	$FV = \frac{19}{40} = 0.475$	$D = \frac{15-5}{10} = 0.90$
6.	$FV = \frac{19}{40} = 0.475$	$D = \frac{12-7}{10} = 0.50$
7.	$FV = \frac{20}{40} = 0.50$	$D = \frac{11-9}{10} = 0.20$
8.	$FV = \frac{35}{40} = 0.85$	$D = \frac{19-16}{10} = 0.30$
9.	$FV = \frac{35}{40} = 0.85$	$D = \frac{19-16}{10} = 0.30$
10.	$FV = \frac{9}{40} = 0.225$	$D = \frac{7-2}{10} = 0.50$
11.	$FV = \frac{26}{40} = 0.65$	$D = \frac{15-11}{10} = 0.40$
12.	$FV = \frac{9}{40} = 0.225$	$D = \frac{7-2}{10} = 0.50$
13.	$FV = \frac{32}{40} = 0.80$	$D = \frac{17-15}{10} = 0.20$
14.	$FV = \frac{20}{40} = 0.50$	$D = \frac{13-7}{10} = 0.60$
15.	$FV = \frac{25}{40} = 0.625$	$D = \frac{15-10}{10} = 0.50$
16.	$FV = \frac{19}{40} = 0.475$	$D = \frac{12-7}{10} = 0.50$
17.	$FV = \frac{34}{40} = 0\ 85$	$D = \frac{18-16}{10} = 0.20$
18.	$FV = \frac{34}{40} = 0.85$	$D = \frac{19-15}{10} = 0.40$
19.	$FV = \frac{10}{40} = 0.25$	$D = \frac{8-2}{10} = 0.60$
20.	$FV = \frac{10}{40} = 0.25$	$D = \frac{9-1}{10} = 0.80$

FORMULA

$$FV = \frac{R}{N} = \frac{Correct\ Answer}{Number\ of\ testees}$$

The criteria of level difficulty (Heaton: 1979):

0.00 - 0.14	Very Difficult
0.15 - 0.29	Difficult
30 - 70	Acceptable
71 - 85	Easy
86 - 1	Very Easy

The criteria of discrimination power (Harris: 1969)

$$D = \frac{Correct\ U - Correct\ L}{n}$$

n = number of students in one group

The criteria of discrimination power (Harris: 1969)

- 1.00	until	+ 1.9	Low
+ .20	until	+ .39	Satisfaction
+ .40	until	+ 1.00	Very Effective

THE TRY-OUT AND PRETESTS SCORES

Try-out Group X.7	Control Group X.9	Experimental Group X.8
55	50	60
60	50	60
90	60	45
65	65	65
20	45	70
55	65	60
55	85	40
95	80	60
65	70	65
60	70	40
45	50	55
90	60	65
55	75	80
60	60	55
50	55	55
55	90	60
95	70	45
50	65	40
50	60	45
60	60	45
85	60	80
80	65	45
65	50	60
60	55	65
55	60	75
30	60	70
25	50	85
55	65	50
45	55	50
70	70	65
50	65	55
20	65	40
55	60	50
25	35	45
50	70	45
65	40	65
45	70	50
45	70	65
55		
30		
2240	**2350**	**2170**

THE CALCULATIONS OF TWO MEANS TESTS

No	Control Group (X.9)		Try-out Group (X.7)	
	xA	x^2A	xB	x^2B
1	50	2500	55	3025
2	50	2500	60	3600
3	60	3600	90	8100
4	65	4225	65	4225
5	45	2025	20	400
6	65	4225	55	3025
7	85	7225	55	3025
8	80	6400	95	9025
9	70	4900	65	4225
10	70	4900	60	3600
11	50	2500	45	2025
12	60	3600	90	8100
13	75	5625	55	3025
14	60	3600	60	3600
15	55	3025	50	2500
16	90	8100	55	3025
17	70	4900	95	9025
18	65	4225	50	2500
19	60	3600	50	2500
20	60	3600	60	3600
21	60	3600	85	7225
22	65	4225	80	6400
23	50	2500	65	4225
24	55	3025	60	3600
25	60	3600	55	3025
26	60	3600	30	900
27	50	2500	25	625
28	65	4225	55	3025
29	55	3025	45	2025
30	70	4900	70	4900
31	65	4225	50	2500
32	65	4225	20	400
33	60	3600	55	3025
34	35	1225	25	625
35	70	4900	50	2500
36	40	1600	65	4225
37	70	4900	45	2025
38	70	4900	45	2025
39			55	3025
40			30	900
Total	**2350**	**150050**	**2240**	**139350**
mean	**61.84**		**56**	
SD	**11.295**		**18.885**	

TEST OF HYPOTHESIS

1. Ho = μA = μB, there is no significant difference between the mean of two groups

   Ha = μA > μB, the means score of group A is greater than group B

2. *t- test*, where db = nA+nB-2 = 76

   t (.05/2) = 2.000

3. Calculation for t – observation (*to*):

   A: Control Group (X.9)

$$\overline{X} = \frac{\Sigma x}{n} = 61.84$$

$$S = \sqrt{\frac{n\Sigma X^2 - (\Sigma X)^2}{n(n-1)}} = 11.295$$

   B: Try-out Group (X.7)

$$\overline{X} = \frac{\Sigma x}{n} = 56$$

$$S = \sqrt{\frac{n\Sigma X^2 - (\Sigma X)^2}{n(n-1)}} = 18.885$$

$$to = \frac{\overline{X}A - \overline{X}B}{\sqrt{\frac{(nA-1)S^2A + (nB-1)S^2B}{nA+nB-2}\left(\frac{1}{nA} + \frac{1}{nB}\right)}} = 1.646$$

4. Conclusion:

   Because t-observation (*to*) = 1.646 < t (.05/2), Ho is accepted. Hence, we can conclude that there is no significant different between the mean score of group A and group B.

THE CALCULATIONS OF TWO MEANS TESTS

No	Experimental Group (X.8)		Try-out Group (X.7)	
	xA	x^2A	xB	x^2B
1	60	3600	55	3025
2	60	3600	60	3600
3	45	2025	90	8100
4	65	4225	65	4225
5	70	4900	20	400
6	60	3600	55	3025
7	40	1600	55	3025
8	60	3600	95	9025
9	65	4225	65	4225
10	40	1600	60	3600
11	55	3025	45	2025
12	65	4225	90	8100
13	80	6400	55	3025
14	55	3025	60	3600
15	55	3025	50	2500
16	60	3600	55	3025
17	45	2025	95	9025
18	40	1600	50	2500
19	45	2025	50	2500
20	45	2025	60	3600
21	80	6400	85	7225
22	45	2025	80	6400
23	60	3600	65	4225
24	65	4225	60	3600
25	75	5625	55	3025
26	70	4900	30	900
27	85	7225	25	625
28	50	2500	55	3025
29	50	2500	45	2025
30	65	4225	70	4900
31	55	3025	50	2500
32	40	1600	20	400
33	50	2500	55	3025
34	45	2025	25	625
35	45	2025	50	2500
36	65	4225	65	4225
37	50	2500	45	2025
38	65	4225	45	2025
39			55	3025
40			30	900
Total	**2170**	**129300**	**2240**	**139350**
mean	**57.10**		**56**	
SD	**12.060**		**18.885**	

TEST OF HYPOTHESIS

1. Ho = μA = μB, there is no significant difference between the mean of two groups

   Ha = μA > μB, the means score of group A is greater than group B

2. *t- test*, where db = nA+nB-2 = 76

   t (.05/2) = 2.000

3. Calculation for t – observation (to):

   A = Experimental Group (X.8)

$$\overline{X} = \frac{\Sigma x}{n} = 57.10$$

$$S = \sqrt{\frac{n\Sigma X^2 - (\Sigma X)^2}{n(n-1)}} = 12.060$$

   B = Try-out Group (X.7)

$$\overline{X} = \frac{\Sigma x}{n} = 56$$

$$S = \sqrt{\frac{n\Sigma X^2 - (\Sigma X)^2}{n(n-1)}} = 18.885$$

$$to = \frac{\overline{X}A - \overline{X}B}{\sqrt{\frac{(nA-1)S^2A + (nB-1)S^2B}{nA+nB-2}\left(\frac{1}{nA}+\frac{1}{nB}\right)}} = 0.019$$

4. Conclusion:

   Because t-observation (to) = 0.019 < t (.05/2), Ho is accepted. Hence, we can conclude that there is no significant different between the mean score of group A and group B.

THE CALCULATIONS OF TWO MEANS TESTS

No	Control Group (X.9)		Experimental Group (X.8)	
	xA	x^2A	xB	x^2B
1	50	2500	60	3600
2	50	2500	60	3600
3	60	3600	45	2025
4	65	4225	65	4225
5	45	2025	70	4900
6	65	4225	60	3600
7	85	7225	40	1600
8	80	6400	60	3600
9	70	4900	65	4225
10	70	4900	40	1600
11	50	2500	55	3025
12	60	3600	65	4225
13	75	5625	80	6400
14	60	3600	55	3025
15	55	3025	55	3025
16	90	8100	60	3600
17	70	4900	45	2025
18	65	4225	40	1600
19	60	3600	45	2025
20	60	3600	45	2025
21	60	3600	80	6400
22	65	4225	45	2025
23	50	2500	60	3600
24	55	3025	65	4225
25	60	3600	75	5625
26	60	3600	70	4900
27	50	2500	85	7225
28	65	4225	50	2500
29	55	3025	50	2500
30	70	4900	65	4225
31	65	4225	55	3025
32	65	4225	40	1600
33	60	3600	50	2500
34	35	1225	45	2025
35	70	4900	45	2025
36	40	1600	65	4225
37	70	4900	50	2500
38	70	4900	65	4225
39				
40				
Total	**2350**	**150050**	**2170**	**129300**
mean	**61.84**		**57.10**	
SD	**11.295**		**12.060**	

TEST OF HYPOTHESIS

1. Ho = μA = μB, there is no significant difference between the mean of two groups

   Ha = μA > μB, the means score of group A is greater than group B

2. *t- test*, where db = nA+nB-2 = 76

   t (.05/2) = 2.000

3. Calculation for t – observation (to):

A = Control Group (X.9)

$$\overline{X} = \frac{\Sigma x}{n} = 61.84$$

$$S = \sqrt{\frac{n\Sigma X^2 - (\Sigma X)^2}{n(n-1)}} = 11.295$$

B = Experimental Group (X.8)

$$\overline{X} = \frac{\Sigma x}{n} = 57.10$$

$$S = \sqrt{\frac{n\Sigma X^2 - (\Sigma X)^2}{n(n-1)}} = 12.060$$

$$to = \frac{\overline{X}A - \overline{X}B}{\sqrt{\frac{(nA-1)S^2A + (nB-1)S^2B}{nA+nB-2}\left(\frac{1}{nA}+\frac{1}{nB}\right)}} = 0.897$$

4. Conclusion:

   Because t-observation (to) = 0.897 < t (.05/2), Ho is accepted. Hence, we can conclude that there is no significant different between the mean score of group A and group B.

POSTTEST SCORES OF EXPERIMENTAL GROUP AND CONTROL GROUP

No	Experimental group (STAD)	Control group (non STAD)
1	70	60
2	65	50
3	55	60
4	75	65
5	65	45
6	75	55
7	60	95
8	75	75
9	75	80
10	80	85
11	60	75
12	60	55
13	95	80
14	70	55
15	75	65
16	95	80
17	60	70
18	55	75
19	50	80
20	75	70
21	90	55
22	60	65
23	85	70
24	85	70
25	85	80
26	100	70
27	95	60
28	65	60
29	70	65
30	80	70
31	65	65
32	60	75
33	55	55
34	70	40
35	90	80
36	70	45
37	60	75
38	65	75
Total	**2740**	**2550**

THE CALCULATIONS OF TWO MEANS TESTS IN TOTAL QUESTIONS

No	Experimental group (STAD)		Control group (non STAD)	
	xA	x^2A	xB	x^2B
1	70	4900	60	3600
2	65	4225	50	2500
3	55	3025	60	3600
4	75	5625	65	4225
5	65	4225	45	2025
6	75	5625	55	3025
7	60	3600	95	9025
8	75	5625	75	5625
9	75	5625	80	6400
10	80	6400	85	7225
11	60	3600	75	5625
12	60	3600	55	3025
13	95	9025	80	6400
14	70	4900	55	3025
15	75	5625	65	4225
16	95	9025	80	6400
17	60	3600	70	4900
18	55	3025	75	5625
19	50	2500	80	6400
20	75	5625	70	4900
21	90	8100	55	3025
22	60	3600	65	4225
23	85	7225	70	4900
24	85	7225	70	4900
25	85	7225	80	6400
26	100	10000	70	4900
27	95	9025	60	3600
28	65	4225	60	3600
29	70	4900	65	4225
30	80	6400	70	4900
31	65	4225	65	4225
32	60	3600	75	5625
33	55	3025	55	3025
34	70	4900	40	1600
35	90	8100	80	6400
36	70	4900	45	2025
37	60	3600	75	5625
38	65	4225	75	5625
Total	**2740**	**203900**	**2550**	**176600**
n	**38**		**38**	
MEAN	**72.105**		**67.105**	
SD	**13.081**		**12.172**	

TEST OF HYPOTHESIS

1. Ho = mA = mA, there is no difference between the means of the groups

   Ha = mB > mB, mean score of group A is greater than mean score of group B

2. *t – test*, where db = n –1 = 37

   $t(.05) = 1.684$

3. Calculation for *t* – observation (*to*)

   A = STAD class (experimental group)

   $\overline{X} = \frac{\Sigma x}{n} = 72.105; \quad n = 38$

   $S = \sqrt{\frac{n\Sigma X^2 - (\Sigma X)^2}{n(n-1)}} = 13.081$

   B = Conventional class (control group)

   $\overline{X} = \frac{\Sigma x}{n} = 67.105; \quad n = 38$

$$S = \sqrt{\frac{n\Sigma X^2 - (\Sigma X)^2}{n(n-1)}} = 12.172$$

$$to = \frac{\overline{X}A - \overline{X}B}{\sqrt{\frac{(nA-1)S^2A + (nB-1)S^2B}{nA+nB-2}\left(\frac{1}{nA}+\frac{1}{nB}\right)}} = 1.725$$

4. Conclusion :

   Because t – observation (*to*) = 1.725 > t (.05), Ha is accepted.

   Hence, we conclude that the difference between groups is significant and the STAD technique can improve the student's reading comprehension achievement better than conventional technique.

PRETEST AND POSTTEST SCORE OF EXPERIMENTAL GROUP (STAD)

No	PRETEST						POSTTEST					
	FQ	IQ	SMQ	MIQ	SQ	TOTAL	FQ	IQ	SMQ	MIQ	SQ	TOTAL
1	20	15	5	15	5	60	20	15	10	15	10	70
2	15	10	10	10	15	60	20	15	5	10	15	65
3	15	10	5	5	10	45	20	5	10	10	10	55
4	15	15	15	10	10	65	25	15	10	15	10	75
5	20	15	10	10	15	70	20	15	10	10	10	65
6	15	15	10	10	10	60	20	10	15	10	20	75
7	5	10	5	10	10	40	10	10	15	15	10	60
8	25	10	5	15	5	60	25	15	10	15	10	75
9	25	15	0	10	15	65	20	15	5	15	20	75
10	20	5	0	5	10	40	25	15	15	10	15	80
11	20	10	0	10	15	55	20	15	5	15	5	60
12	15	15	15	10	10	65	20	10	10	10	10	60
13	20	15	10	15	20	80	20	20	15	15	25	95
14	25	15	0	5	10	55	25	20	5	15	5	70
15	20	5	10	10	10	55	20	15	10	15	15	75
16	20	10	5	15	10	60	20	20	15	15	25	95
17	15	15	5	10	0	45	20	20	10	10	0	60
18	15	5	5	10	5	40	20	15	5	10	5	55
19	10	15	5	10	5	45	20	5	5	10	10	50
20	25	10	5	5	0	45	25	20	15	10	5	75
21	20	5	15	15	25	80	20	20	10	15	25	90
22	10	10	10	10	5	45	20	15	5	10	10	60
23	20	15	10	10	5	60	25	20	5	15	20	85
24	20	20	5	10	10	65	20	20	10	15	20	85
25	20	15	10	15	15	75	20	20	10	15	20	85
26	25	10	0	15	20	70	25	20	15	15	25	100
27	25	15	10	15	20	85	25	15	15	15	25	95
28	20	10	5	10	5	50	25	15	5	10	10	65
29	20	15	5	10	0	50	25	15	10	10	10	70
30	25	15	10	10	5	65	25	20	15	10	10	80
31	25	15	5	5	5	55	25	5	15	10	10	65
32	10	0	10	10	10	40	20	5	15	5	15	60
33	20	10	10	10	0	50	20	10	15	5	5	55
34	15	10	5	5	10	45	20	15	10	10	15	70
35	15	10	5	10	5	45	25	15	10	15	20	85
36	20	20	5	10	10	65	20	15	10	10	15	70
37	20	10	5	10	5	50	20	5	15	10	15	65
38	20	20	5	10	10	65	25	10	10	5	15	65
TOTAL						**2170**						**2740**

THE CALCULATIONS OF T-TABLE IN TOTAL QUESTIONS

No	Pretest (X)	Posttest (Y)	D (Y-X)	D^2 $(Y-X)^2$
1	60	70	10	100
2	60	65	5	25
3	45	55	10	100
4	65	75	10	100
5	70	65	-5	25
6	60	75	15	225
7	40	60	20	400
8	60	75	15	225
9	65	75	10	100
10	40	80	40	1600
11	55	60	5	25
12	65	60	-5	25
13	80	95	15	225
14	55	70	15	225
15	55	75	20	400
16	60	95	35	1225
17	45	60	15	225
18	40	55	15	225
19	45	50	5	25
20	45	75	30	900
21	80	90	10	100
22	45	60	15	225
23	60	85	25	625
24	65	85	20	400
25	75	85	10	100
26	70	100	30	900
27	85	95	10	100
28	50	65	15	225
29	50	70	20	400
30	65	80	15	225
31	55	65	10	100
32	40	60	20	400
33	50	55	5	25
34	45	70	25	625
35	45	90	45	2025
36	65	70	5	25
37	50	60	10	100
38	65	65	0	0
Total	**2170**	**2740**	**570**	**13000**
n			**38**	
mean	**57.105**	**72.105**	**15.000**	
SD			**10.967**	

TEST OF HYPOTHESIS

1. Ho = $\mu A = \mu B$, there is no difference between posttest and pretest

   Ha = $\mu A > \mu B$, score of posttest is greater than pretest

2. *t – test* where db = n –1 = 37

   $t\,(.05) = 1.684$

3. Calculation for *t* – observation

$$\bar{D} = \frac{\Sigma D}{n} = 15$$

$$S = \sqrt{\frac{n\Sigma D^2 - (\Sigma D)^2}{n\,(n-1)}} = 10.966$$

$$to = \frac{\bar{D}}{S/\sqrt{n}} = 9.247$$

4. Conclusion

   Because $to = 9.247 > t\,(.05)$, Ho is rejected. Hence, we can conclude that at a 0.05 level there is a significant difference between pretest and posttest.

THE CALCULATIONS OF T-TEST IN FACTUAL QUESTIONS

No	Pretest (X)	Posttest (Y)	D (Y-X)	D^2
1	20	20	0	0
2	15	20	5	25
3	15	20	5	25
4	15	25	10	100
5	20	20	0	0
6	15	20	5	25
7	5	10	5	25
8	25	25	0	0
9	25	20	-5	25
10	20	25	5	25
11	20	20	0	0
12	15	20	5	25
13	20	20	0	0
14	25	25	0	0
15	20	20	0	0
16	20	20	0	0
17	15	20	5	25
18	15	20	5	25
19	10	20	10	100
20	25	25	0	0
21	20	20	0	0
22	10	20	10	100
23	20	25	5	25
24	20	20	0	0
25	20	20	0	0
26	25	25	0	0
27	25	25	0	0
28	20	25	5	25
29	20	25	5	25
30	25	25	0	0
31	25	25	0	0
32	10	20	10	100
33	20	20	0	0
34	15	20	5	25
35	15	25	10	100
36	20	20	0	0
37	20	20	0	0
38	20	25	5	25
Total	**710**	**820**	**110**	**850**
n			**38**	
mean	**18.684**	**21.578**	**2.894**	
SD			**3.790**	

TEST OF HYPOTHESIS

1. Ho = μA = μA, there is no difference between posttest and protest

   Ha = μA > μB, score of posttest is greater than pretest

2. *t – test*, where db = n –1 = 37

   t (.05) = 1.684

3. Calculation for t – observation (*to*)

$$\overline{D} = \frac{\Sigma D}{n} = 2.894$$

$$S = \sqrt{\frac{n.\Sigma D^2 - (\Sigma D)^2}{n(n-1)}} = 3.790$$

$$to = \frac{\overline{D}}{S/\sqrt{n}} = 4.713$$

4. Conclusion

   Because t – observation = 4.713 > t (.05) Ho is rejected. Hence, we can conclude that at a 0.05 level there is a significant difference between pretest and posttest.

THE CALCULATIONS OF T-TEST IN INFERENCE QUESTIONS

No	Pretest (X)	Posttest (Y)	D (Y-X)	D^2
1	15	15	0	0
2	10	15	5	25
3	10	5	-5	25
4	15	15	0	0
5	15	15	0	0
6	15	10	-5	25
7	10	10	0	0
8	10	15	5	25
9	15	15	0	0
10	5	15	10	100
11	10	15	5	25
12	15	10	-5	25
13	15	20	5	25
14	15	20	5	25
15	5	15	10	100
16	10	20	10	100
17	15	20	5	25
18	5	15	10	100
19	15	5	-10	100
20	10	20	10	100
21	5	20	15	225
22	10	15	5	25
23	15	20	5	25
24	20	20	0	0
25	15	20	5	25
26	10	20	10	100
27	15	15	0	0
28	10	15	5	25
29	15	15	0	0
30	15	20	5	25
31	15	5	-10	100
32	0	5	5	25
33	10	10	0	0
34	10	15	5	25
35	10	15	5	25
36	20	15	-5	25
37	10	5	-5	25
38	20	10	-10	100
Total	**460**	**550**	**90**	**1600**
n			**38**	
mean	**12.105**	**14.473**	**2.368**	
SD			**6.122**	

TEST OF HYPOTHESIS

1. Ho = μA = μB, there is no difference between posttest and pretest
   Ha = μA > μB, score of posttest is greater than pretest

2. *t – test*, where db = n –1 = 37
   t (.05) = 1.684

3. Calculation for *to* =

$$\overline{D} = \frac{\Sigma D}{n} = 2.368$$

$$S = \sqrt{\frac{n.\Sigma D^2 - (\Sigma D)^2}{n(n-1)}} = 6.122$$

$$to = \frac{\overline{D}}{S/\sqrt{n}} = 2.384$$

4. Conclusion:
   Because *to* = 2.384 > *t* (.05), Ho is rejected. Hence, we can conclude that at a 0.05 level there is a significant difference between pretest and posttest

THE CALCULATIONS OF T-TEST IN SUBJECT MATTER QUESTIONS

No	Pretest (X)	Posttest (Y)	D (Y-X)	D^2
1	5	10	5	25
2	10	5	-5	25
3	5	10	5	25
4	15	10	-5	25
5	10	10	0	0
6	10	15	5	25
7	5	15	10	100
8	5	10	5	25
9	0	5	5	25
10	0	15	15	225
11	0	5	5	25
12	15	10	-5	25
13	10	15	5	25
14	0	5	5	25
15	10	10	0	0
16	5	15	10	100
17	5	10	5	25
18	5	5	0	0
19	5	5	0	0
20	5	15	10	100
21	15	10	-5	25
22	10	5	-5	25
23	10	5	-5	25
24	5	10	5	25
25	10	10	0	0
26	0	15	15	225
27	10	15	5	25
28	5	5	0	0
29	5	10	5	25
30	10	15	5	25
31	5	15	10	100
32	10	15	5	25
33	10	15	5	25
34	5	10	5	25
35	5	10	5	25
36	5	10	5	25
37	5	15	10	100
38	5	10	5	25
Total	**255**	**400**	**145**	**1575**
n			**38**	
mean	**6.710**	**10.526**	**3.815**	
SD			**5.254**	

TEST OF HYPOTHESIS

1. Ho = $\mu A = \mu B$, there is no difference between posttest and pretest

   Ha = $\mu A > \mu B$, score of posttest is greater than pretest

2. *t – test* where db = n –1 = 37

   $t\,(.05) = 1.684$

3. Calculation for *to* =

$$\overline{D} = \frac{\Sigma D}{n} = 3.815$$

$$S = \sqrt{\frac{n.\Sigma D^2 - (\Sigma D)^2}{n\,(n-1)}} = 5.254$$

$$to = \frac{\overline{D}}{S/\sqrt{n}} = 4.477$$

4. Conclusion

   Because *to* = 4.477 > *t* (.05), Ho is rejected. Hence, we can conclude that at a 0.05 level there is a significant difference between pretest and posttest.

THE CALCULATIONS OF T-TEST IN MAIN IDEA QUESTIONS

No	Pretest (X)	Posttest (Y)	D (Y-X)	D^2
1	15	15	0	0
2	10	10	0	0
3	5	10	5	25
4	10	15	5	25
5	10	10	0	0
6	10	10	0	0
7	10	15	5	25
8	15	15	0	0
9	10	15	5	25
10	5	10	5	25
11	10	15	5	25
12	10	10	0	0
13	15	15	0	0
14	5	15	10	100
15	10	15	5	25
16	15	15	0	0
17	10	10	0	0
18	10	10	0	0
19	10	10	0	0
20	5	10	5	25
21	15	15	0	0
22	10	10	0	0
23	10	15	5	25
24	10	15	5	25
25	15	15	0	0
26	15	15	0	0
27	15	15	0	0
28	10	10	0	0
29	10	10	0	0
30	10	10	0	0
31	5	10	5	25
32	10	5	-5	25
33	10	5	-5	25
34	5	10	5	25
35	10	15	5	25
36	10	10	0	0
37	10	10	0	0
38	10	5	-5	25
Total	**390**	**450**	**60**	**500**
n			**38**	
mean	**10.263**	**11.842**	**1.578**	
SD			**3.309**	

TEST OF HYPOTHESIS

1. Ho = μA = μB, there is no difference between posttest and pretest

   Ha = μA > μB, score of posttest is greater than pretest

2. *t – test* where db = n –1 = 37

   t (.05) = 1.684

3. Calculation for *to* =

$$\overline{D} = \frac{\Sigma D}{n} = 1.578$$

$$S = \sqrt{\frac{n.\Sigma D^2 - (\Sigma D)^2}{n(n-1)}} = 3.309$$

$$to = \frac{\overline{D}}{S/\sqrt{n}} = 2.944$$

4. Conclusion

   Because *to* = 2.944 > t (.05), Ho is rejected. Hence, we can conclude that at a 0.05 level there is a significant difference between pretest and posttest.

THE CALCULATIONS OF T-TEST IN STRUCTURAL QUESTIONS

No	Pretest (X)	Posttest (Y)	D (Y-X)	D^2
1	5	10	5	25
2	15	15	0	0
3	10	10	0	0
4	10	10	0	0
5	15	10	-5	25
6	10	20	10	100
7	10	10	0	0
8	5	10	5	25
9	15	20	5	25
10	10	15	5	25
11	15	5	-10	100
12	10	10	0	0
13	20	25	5	25
14	10	5	-5	25
15	10	15	5	25
16	10	25	15	225
17	0	0	0	0
18	5	5	0	0
19	5	10	5	25
20	0	5	5	25
21	25	25	0	0
22	5	10	5	25
23	5	20	15	225
24	10	20	10	100
25	15	20	5	25
26	20	25	5	25
27	20	25	5	25
28	5	10	5	25
29	0	10	10	100
30	5	10	5	25
31	5	10	5	25
32	10	15	5	25
33	0	5	5	25
34	10	15	5	25
35	5	20	15	225
36	10	15	5	25
37	5	15	10	100
38	10	15	5	25
Total	**355**	**520**	**165**	**1725**
n			**38**	
mean	**9.342**	**13.684**	**4.342**	
SD			**5.220**	

TEST OF HYPOTHESIS

1. Ho = μA = μB. There is no difference between posttest and pretest

   Ha = μA > μB, score of posttest is greater than pretest

2. *t – test* where db = n –1 = 37

   t (.05) = 1.684

3. Calculation for *to* =

$$\bar{D} = \frac{\Sigma D}{n} = 4.342$$

$$S = \sqrt{\frac{n.\Sigma D^2 - (\Sigma D)^2}{n(n-1)}} = 5.220$$

$$to = \frac{\bar{D}}{S/\sqrt{n}} = 5.132$$

4. Conclusion

   Because *to* = 5.132 > t (.05), Ho is rejected. Hence, we can conclude that at a 0.05 level there is a significant difference between pretest and posttest.

THE GAIN SCORE OF EXPERIMENTAL GROUP AND CONTROL GROUP

Experimental Group			Control Group		
NO	X	X^2	NO	X	X^2
1	10	100	1	10	100
2	5	25	2	0	0
3	10	100	3	0	0
4	10	100	4	0	0
5	-5	25	5	0	0
6	15	225	6	-10	100
7	20	400	7	10	100
8	15	225	8	-5	25
9	10	100	9	10	100
10	40	1600	10	15	225
11	5	25	11	25	625
12	-5	25	12	-5	25
13	15	225	13	5	25
14	15	225	14	-5	25
15	20	400	15	10	100
16	35	1225	16	-10	100
17	15	225	17	0	0
18	15	225	18	10	100
19	5	25	19	20	400
20	30	900	20	10	100
21	10	100	21	-5	25
22	15	225	22	0	0
23	25	625	23	20	400
24	20	400	24	15	225
25	10	100	25	20	400
26	30	900	26	10	100
27	10	100	27	10	100
28	15	225	28	-5	25
29	20	400	29	10	100
30	15	225	30	0	0
31	10	100	31	0	0
32	20	400	32	10	100
33	5	25	33	-5	25
34	25	625	34	5	25
35	40	1600	35	10	100
36	5	25	36	5	25
37	15	225	37	5	25
38	0	0	38	5	25
TOTAL	**570**	**12700**	**TOTAL**	**200**	**3850**
MEAN	**15**		**MEAN**	**5,263**	
SD	**10,59**		**SD**	**8,69**	

TEST OF HYPOTHESIS

1. Ho = mA = mA, there is no difference between the means of the groups

   Ha = mB > mB, mean score of group A is greater than mean score of group B

2. *t – test*, where db = n –1 = 37

   t (.05) = 1.684

3. Calculation for *t* – observation (*to*)

   A = STAD class (experimental group)

$$\overline{X} = \frac{\Sigma x}{n} = 15; \quad n = 38$$

$$S = \sqrt{\frac{n\Sigma X^2 - (\Sigma X)^2}{n(n-1)}} = 10.59$$

   B = Conventional class (control group)

$$\overline{X} = \frac{\Sigma x}{n} = 5.263; \quad n = 38$$

$$S = \sqrt{\frac{n\Sigma X^2 - (\Sigma X)^2}{n(n-1)}} = 8.69$$

$$to = \frac{\overline{X}A - \overline{X}B}{\sqrt{\frac{(nA-1)S^2A + (nB-1)S^2B}{nA+nB-2}\left(\frac{1}{nA}+\frac{1}{nB}\right)}} = 4.382$$

4. Conclusion :

   Because t – observation (*to*) = 4.382 > t (.05), Ha is accepted.

   Hence, we conclude that the difference between groups is significant and the STAD technique can improve the student's reading comprehension achievement better than conventional technique.