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NUTRITION FOR THE COMMUNITY

A.N.C.-1

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By: Simantini Nigam

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**Sample Preview
of the
Solved
Sample Question
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QUESTION PAPER

Exam Held in
February – 2021

(Solved)

NUTRITION FOR THE COMMUNITY

A.N.C.-1

Time: 3 Hours]

[Maximum Marks: 100

Note: Question No. 1 is compulsory. Attempt any five questions in all. All questions carry equal marks.

Q. 1. (a) Explain the following briefly:

(i) Cycle Menu

Ans. It is weekly menu that helps in bringing variety in the dishes without any repetition. Through cycle menu, one can organize its purchasing plan as he know what items are required on a particular day.

(ii) Overhead expenses in a food service unit.

Ans. "Overhead" is a business term used to describe operational costs not related to direct materials and labour. Overhead costs refer to ongoing expenses that come with running a restaurant such as advertising, utilities, rent and salaries. The important thing to remember is that this concept applies only to expenses that are not related to the costs of raw materials, food and other components related to producing goods.

(iii) Inhibitors

Ans. Ref.: See Chapter-5, Page No. 20, 'Inhibitors'.

(iv) Rhodopsin

Ans. Rods possess a pigment called Rhodopsin, it help rod cells to detect small amount of light. Rhodopsin is formed by combination of protein and vitamin A. An amazing thing about this pigment is that whenever it is exposed to bright light, rhodopsin breaks down into its basic components – protein and vitamin; and in dim light or dark they again combine to make rhodopsin and help us see in the dark or in dim light. This is the reason that our eyes take some time to adjust to dim light once we come from bright light.

(v) Cretinism

Ans. Ref.: See Chapter-18, Page No. 116, 'Cretinism'.

(b) Give one example for each of the following:

(i) Risk factors of obesity

Ans. Over-eating and Sedantary Life Style.

(ii) Types of diabetes

Ans. (a) Insuline Dependent Diabetes Mellitus (IDDM).

(b) Non-insuline Dependent Diabetes Mellitus (NIDDM).

(iii) Manifestation of coronary heart disease

Ans. Angina Pectoris.

(iv) Clinical manifestation of Xerophthalmia

Ans. Night Blindness.

(v) Clinical feature of thiamine deficiency

Ans. Loss of appetite due to Beri-Beri Disease.

(vi) Neurotoxin found in kesari dal

Ans. Cathyrism.

(vii) Food supplementation programme

Ans. Mid-day Meal Programme (MDM).

(viii) Nutrient Deficiency Control Programme

Ans. The National Anaemia Control Programme.

(ix) Biochemical assessment/test

Ans. Blood and Urine Test.

(x) Industrial contaminant of food

Ans. Mercury, Cadmium.

Q. 2. (a) "Social, Psychological and Economic factors determine the acceptability of food".

Justify the statement giving appropriate examples.

Ans. Ref.: See Chapter-1, Page No. 2, 'Social, Psychological and Economic Aspects of Nutrition'.

(b) Give the chemical nature, food sources and functions of the following nutrients in our body:

(i) Proteins

Ans. Ref.: See Chapter-3, Page No. 10, 'Proteins'.

(ii) Fats

Ans. Ref.: See Chapter-3, Page No. 11, 'Fats'.

Q. 3. (a) "Recommended dietary allowances for adults are based on activity level, sex and body weight." Explain the statement, giving appropriate justifications and RDA.

Ans. Ref.: See Chapter-6, Page No. 27, 'Use of Recommended Dietary Intakes of Planning Balanced Diet'.

(b) What is a balanced diet? Plan a balanced diet for an elderly, highlighting the points you will keep in mind while planning the diet.

Ans. Ref.: See Chapter-6, Page No. 24, 'Concept of a Balanced Diet', Chapter-7, Page No. 39, 'What are Specific Considerations for Older Adults?'

Q. 4. Explain the following briefly:

(a) Breast milk is the best food for the infant.

Ans. Ref.: See Chapter-9, Page No. 57, Q. 1 (a) and (b).

(b) Changes in digestive functioning during pregnancy and their influence on nutrient intake.

Ans. Ref.: See Chapter-8, Page No. 44, 'Changes in Digestive Functioning'.

(c) Community based management of protein energy malnutrition.

Ans. Ref.: See Chapter-17, Page No. 109, 'Supplementary Feeding Programmes'.

(d) Interaction between infection and malnutrition.

Ans. Ref.: See Chapter-20, Page No. 123, 'Interaction Between Infection and Malnutrition'.

Q. 5. (a) Elaborate on the factors influencing food budget.

Ans. Ref.: See Chapter-11, Page No. 68, 'Factors Influencing Food Budgeting'.

(b) Enlist the points you would keep in mind while selecting fats and oils for your home.

Ans. Ref.: See Chapter-12, Page No. 76, 'Selection of Fats and Oils'.

(c) Explain the measures you would adopt to prevent food wastage.

Ans. Ref.: See Chapter-15, Page No. 97, 'Measures to Avoid Food Wastage'.

(d) "Food Laws and Food Standards protect the consumer". Justify the statement highlighting the food laws, standards enacted by the Government of India.

Ans. Ref.: See Chapter-16, Page No. 103, 'Protecting the Consumer'.

Q. 6. (a) Who is an "Anganwadi Worker"? What are the services provided by her and who are the beneficiaries?

Ans. Ref.: See Chapter-24, Page No. 148, 'Anganwadi Worker (AWW) and Page No. 150, Q.No. 1'.

(b) Mid Upper Arm Circumference (MUAC) is a useful indicator of nutritional status. Explain how and give the process.

Ans. Ref.: See Chapter-25, Page No. 152, 'Mid Upper Arm Circumference (MUAC)'.

(c) Give the dose of the following nutrients provided under the national programme for their control and prevention.

(i) Vitamin A to children

Ans. Ref.: See Chapter-23, Page No. 141, 'Dose and Distribution Strategy'.

(ii) Iron to pregnant women and children.

Ans. Ref.: See Chapter-23, Page No. 142, 'Distribution Strategy (The National Anaemia Control Programme'.

Q. 7. As a food service manager, what points would you keep in mind regarding the following?

(a) Deciding on the menu

Ans. Ref.: See Chapter-26, Page No. 160, 'Deciding on the Menu'.

(b) Identifying the resources

Ans. Ref.: See Chapter-26, Page No. 161, 'Identifying Resources'.

(c) Purchasing equipment

Ans. Ref.: See Chapter-27, Page No. 167, 'Purchasing Equipment'.

(d) Storing food items in the store

Ans. Ref.: See Chapter-27, Page No. 170, 'Storing'.

Q. 8. Write short notes on the following:

(a) Mid-day meal programme – supplements provided and their nutritive value.

Ans. Ref.: See Chapter-24, Page No. 148, 'Mid-Day Meal Programme (MDM)'.

(b) Methods of food preservation at home level.

Ans. Ref.: See Chapter-15, Page No. 96, 'Home-Scale Food Preservation'.

(c) Causes of food spoilage.

Ans. Ref.: See Chapter-14, Page No. 89, 'Causes of Food Spoilage'.

(d) Physical changes during adolescence and their impact on nutrient needs.

Ans. Ref.: See Chapter-10, Page No. 62, 'The Adolescent'.

(e) Food groups and their uses

Ans. Ref.: See Chapter-6, Page No. 24, 'Use of Food Groups in Planning Balanced Diets'.



Sample Preview of The Chapter

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NUTRITION FOR THE COMMUNITY

BASIC CONCEPTS IN NUTRITION-I

1

Food, Nutrition and Health

INTRODUCTION

The thought of food brings countless metaphors in the mind of each and every person. In most places food is worshiped and is associated with celebrations, divinity, family gatherings and festivities. Food is the central point of our lives as without it we may not be able to survive as it is the “life giver” secondly, it also helps in providing nutrition to the body required for the growth and development in all respects.

The scientific study of food is called nutrition it also explains how the body utilizes the food. To keep us healthy we need to eat proper food at the right time and right quantity is very important. One can remain healthy only following the proper eating pattern. A lot of us may now think of the question of what and how much one should eat to remain fit and healthy? The scale differs from child to an adult and an even older person. There are many questions that a layman may ask regarding this and only a nutritionist can answer all of them.

CHAPTER AT A GLANCE

FOOD AND ITS FUNCTIONS

Food nourishes body which includes semi-solids and liquids that help sustain body and keep it healthy. The substances essential for our body are present in the food that we eat. These substances help us perform important functions in the daily life. All that our body needs to keep going is called nutrients. Deficiency of these nutrients can cause ill health and death in extreme cases. But all that food contains is not nutritious there are also some colouring and flavouring agents present in the food.

FUNCTIONS OF FOOD

The food that we eat contains around forty various nutrients and these can broadly be categorized into five heads based on their features. They are: Proteins, Carbohydrates, Fats, Vitamins and Minerals. Each of these have specific role in the physiological function in human beings. It not only physiological but sociological and psychological importance of food is also there in human life. The functions of food are shown as below:

Body Building	Protection	Regulation
Energy Giving	Social	Psychological

Functions of Food Physiological Function

Physiological Function: Those functions which affect the body in terms of physical activities are called the physical functions of the food, this includes energy giving, body building, protective and regulatory functions. Energy is most important for performing various activities of life such as sitting, walking, reading and all of them including the activities that are happening inside the body such as heart beat, intestinal contractions and expansion and contraction of lungs etc. carbohydrates and fats are the nutrients that provide energy to the body and are called body fuels similar to the coal and wood which gives fuel. As when we burn the wood the energy is released into heat and light human body gets energy by burning carbohydrates and fats is used for various activities by the human body.

Our body is made up of millions of tissues or cells when we grow cells increase in size and are also added and when these cells die or are worn out they get replaced. Food is important for the growth and repair of the body as well. Proteins play an important role in the body growth and its repair. The body gets protection from various kinds of infections for proper functioning of the body and fighting infections. Food on one hand prevents infections and on the other hand if in case one gets infected nutrients present in the food make possible a rapid recovery. A poor diet will make a person prone to infections and illness and will prolong recovery.

The body has to maintain various activities such as body temperature, heart-beat, contractions of muscles and each of these has to be controlled example, pulse rate at which the heart should beat per minute is 74 times, body temperature

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and many more. All these can be regulated by specific nutrients that we eat. Water, proteins, minerals and vitamins all together contribute for the protective and regulatory function of the body.

Apart from the above there are several chemical reactions that take place in the human body. The chemical reactions change simpler substances into more complex ones and then again complex substances are broken down into their simpler forms all this is controlled by vitamins, minerals and proteins according to the body need.

Psychological Functions: Food also satisfies the emotional needs example when a mother cooks child's favourite food she expresses her love for the child. The child also appreciates and recognizes the mother's love. This is how the emotional need is fulfilled by the food. Also when you share food it is a kind of friendship extended to the other person and acceptance of the same. According from a child's perspective food also makes place for him in a particular group. A child always feels confident to eat the food which his friends and those whom he considers are important are enjoying. To show our emotions food plays an important role example when a mother wants to reward her child she serves child's favourite food, or when her husband is expected back home from a long official tour his favourite food is being cooked this invokes a pleasant feeling in the mind of the child or husband as the case may be. There are some food items which are associated with sickness and are not considered pleasant at all.

MEANING OF NUTRITION

The scientific regulation of food as the main source is called nutrition. The definition-

The scientific discipline of food as major focus of interest is nutrition. In other words " the study of what happens to food once it enters the mouth and thereafter".

- The science of food, the nutrients and other substances therein, the action, interaction and balance in relationship to health and disease: the process by which the organism ingests, digest, absorbs, transports and utilizes nutrients and disposes of their end products.

Nutrients: Action, Interest and Balance

Food contains both nutrients and non-nutrient substances. The quantity required by the body for each nutrient is different and specific, such as macronutrients are required in large amounts whereas others (micronutrients) in small quantity but all of them are equally essential for the body. Calcium helps building strong bones and teeth but there is also one more nutrient-phosphorus in them. Both are required in their specific amounts for the normal and proper growth. So we can say an interaction in calcium and phosphorus is required for the normal growth of bones and teeth or a balance in the two nutrients is a must.

The balance between various minerals is also very important. A phosphorus rich diet prevents absorption of calcium in the body. This imbalance of calcium and phosphorus negatively affect the bones and teeth in the body. This can also be corrected by the right kind of food intake and a right balance to be strike. Balance is required in supply of all nutrients in respect of right quantity and proportion.

Handling of Food and Nutrients by the Body

The body uses the food that we eat, but how does it happen? There is a complete process from chewing the food

followed by swallowing and then through the stomach it reaches to a long coiled tube called intestine. The food we eat can't be utilized as it is so it is converted into utilizable form by the process called digestion. Only after the complete procedure of digestion the nutrients are in the form that can be utilized. Only after digestion the nutrients are available in the form that can be utilized by the body. The process of moving nutrients from intestine to blood is called absorption of nutrients, which through blood get transported to all the cells and are used by different body parts. The left over unabsorbed substance is thrown out of body in the form of faeces. The nutrients then form other substances or by-products, some of them are harmful and are thrown out of body through urine.

Social, Psychological and Economic Aspects of Nutrition

The acceptability of a food depends on the social and psychological factors of a particular dietary pattern. We may suggest some food to a person but chances of him accepting it would depend upon various factors such as acceptability by his community, family economic conditions and many other things.

Social Functions: Social view point of food is associated with sharing of food which means social acceptance. This gives a feeling of respect, friendship to the other person. Earlier things were different when a person would not share meal with an inferior person which has been considerably changed now with the culture of eating in public places like restaurants where anybody and everybody can eat food. During festivals also the food forms an integral part everywhere in the world. All community festivals and family celebrations from marriage to child birth special food preparations bring people together.

Social, Psychological and Economic aspects of Nutrition

Whether a person will accept the food planned for him or not depends upon the social and psychological factors around him example, if a person is weak and is advised to eat chicken soup it may not be acceptable to him because of his cultural or religious background. So it becomes very important to know the social background of a person to anticipate his reactions and his economical status for the affordability of the food and then only plan a diet for him.

Social and Cultural Aspects of Eating

Food is considered as life giver according to our ancient vedic tradition. Specific qualities are also attributed to the specific food items such as satvic food mainly milk and milk products are said to increase the intellectual capacity, creativity energy and cheerfulness. The Rajsic food which includes fish, egg and meat and the Tamsic food beef and pork and stale, reheated food stimulates passion. Modern views completely differ from this version and believe that no food can influence our behaviour in any significant way. Many people who are vegetarians share eating space with non-vegetarians, knowing the fact that. The tolerance and adaptability of multi-cultural food in cosmopolitan cities has helped these cities grow much faster than the other cities. Thus the concern for nutrition is not related to body only but also the social acceptance. The community will take its own time to accept new food components however they may highly rich in the nutritive values. The suggestions for the food should be given keeping their point of view in mind. There are many things that need to be kept in mind whether the food item is expensive or is it prohibited for some specific people in the community, the availability of the food and many things.

The Psychology of Eating: How does one react to food depends upon the psychological state of mind of that person, this can be explained by the following examples:

1. Sometimes people unnecessarily pop vitamin tablets not knowing whether they are being absorbed by the body or not.

2. Kids generally get influenced by the advertisements of all sorts of packed food and soft drinks, which mothers constantly avoid giving them but kids do not understand it.

3. After delivery when mother insists on eating panjiri laddoos and til laddoos a daughter agrees to it, as it helps in good flow of milk advised by the mother.

This shows the attitude of different people at different times and the influence of others in our eating pattern. Sometimes we choose the food as recommended by the person we really respect the other time it may be due to influence of an advertisement and sometimes we are so stubborn that don't want to listen to anybody and follow our own mind. This shows the significant influence of our own psychology and the influence of people around us.

The Economics of Food: Everybody needs to pay for buying food. It should be available and within the reach of everyone, or we can say should be equally distributed and this is one of the most important concern. There is always a distribution problem in India where the agricultural production has always been increasing but still people die due to starvation as a large section of the population do not get enough food. Though it is a large economic problem but is closely related to our aim of ensuring good health to all individuals. As these problems are closely related to us we need to ask different professionals from different fields to solve these issues related to food production and supply.

THE CONCEPT OF HEALTH

The health is a day to day word that we use every now and then but the accurate meaning by the World Health Organisation says:

"Health is a state of complete physical, mental and social well being and not merely the absence of disease or infirmity."

According to the definition health is state where an individual is completely well and enjoying that moment. For example, when we are tired and exhausted we do not enjoy a complete well-being. There are times when we are not sick or ill but carry a small infection or period or something and do not feel completely well so can say that a healthy person does not enjoys complete well- being all the time but most of the times. The other dimension of spiritual health is also there, but this is a new concept with reference to health.

Physical Health

The most common aspect of health is the physical condition of a person, this can be easily described and detected such as if a person looks energetic, responsive and alert we consider him to be physically healthy. Good health is a phrase often used, but how often do we stop to think how healthy we really are? The 17 signs below are clear indicators of a strong foundation of health. If one or more of these signs are not quite as they should be, adjusting diet and lifestyle, and introducing broad spectrum nutrition, can make a significant contribution in boosting these essential signs.

- (i) Clear, bright skin and eyes.
- (ii) Strong teeth, gums, nails and hair.
- (iii) Fresh breath and body odour.
- (iv) Meals are digested with ease – no gas, bloating, heartburn etc.

- (v) Feeling energized when you wake, good energy level through the day.
- (vi) Regular, healthy bowel movements.
- (vii) Clear urination.
- (viii) Wounds and bruises heal quickly.
- (ix) Joints and muscles flex with ease.
- (x) Efficient circulation.
- (xi) Consistent temperature, Free from cravings for certain types of food and drink.
- (xii) Able to maintain a suitable weight for your height and build.
- (xiii) Rarely affected by colds, flu and other infections.
- (xiv) Clear and focused thinking.
- (xv) good memory and concentration.
- (xvi) Even and balanced temper.
- (xvii) Able to tolerate stress well.

Mental Health

There are some points to be kept in mind considering mental health:

- (i) No internal conflicts.
- (ii) Not to express disapproval of self or self-pity.
- (iii) Capacity of adjustment with others and with situations.
- (iv) Good emotional control without any feeling of anger, guilt or fear.

Measuring mental health is much more difficult than measuring physical health unless in extreme cases of mental illness. It is difficult to identify people who do not understand others view point or are sensitive to their emotional needs. This causes an alarm if the conditions are persistent in a person for a long time. There is an interrelationship between physical and mental health such as a high blood pressure is physical illness but it is caused by stress and inability of handling difficult situations. So the mental illness has caused physical illness similarly the reverse can also happen, physical illness such as handicap in a person can make feel fearful and self-pity this will lead to constant mental pressure and prevent from normal behaviour with others.

Social Health

Social health is recognition with family first and then with community. An individual's obligation to society and takes care of his family and people around him than is called a socially healthy person. But in absence of mental wellness social goals can't be achieved as mental illness will adversely affect the interaction with others in the society. On the other hand if a person is not physically fit his state of mind would not be in a position to be friendly with others in the society. A physically ill person will be irritable and depressed most of the times and will pass on the society in the form of being rude and unhelpful. Criminals are the best examples of socially ill individuals. They knowingly indulge into socially unacceptable behavior and are also called anti-social elements. There are punishments for these activities as if do not punished will destroy the social structure.

Spiritual Health

The most difficult to define is spiritual health. In India spirituality is understood more as compared to other western countries because we Indians follow religious and moral values more seriously than others. A mentally and physically healthy person will always follow these moral codes of conduct. There are some basic rules such as humanity, doing good to others, be helpful, not to harm anybody and justice. Spiritual health is difficult to attain but only a person committed by duty and

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obligation to society can achieve it. One should not follow religion blindly as it will instead make the person ill rather than making him spiritually healthy. Spirituality is an attitude and concern for others in the society is more important than anything else.

MEANING OF NUTRITIONAL STATUS

When the nutrients are utilized in an individual and the influence of it on the personality of that individual is known as nutritional status. The nutritional status can be determined by

- Consumption of the type of food.
- If there is any illness what kind it is and observation of that person.
- Test blood and urine samples to know about the level of nutrients and other substances in the body of the person.

Less d to consumption of vitamin c may drop the level in the body this can be found out by the diet pattern of that individual.

INTERRELATIONSHIP BETWEEN NUTRITION AND HEALTH

Health is linked with nutrition. It is presumed that if a person eats right kind of food in balanced and in required amount will keep a good health while the improper proportion of food intake can make a person's health ill. Good food is one of the factors that affect the health of a person there are several other factors that influence the health along with the food. The food should be wholesome and nutritious and made in a clean environment. If the cleanliness is not taken care of the food may make the person ill however it being nutritious.

Now we must understand the term "malnutrition" - malnutrition is destruction of health caused due to deficiency or excess of nutrients supplied to the body. Both under-nutrition lack of nutrients and over-nutrition excess of one or more nutrients are considered as malnutrition resulting in ill-health.

In the country like India faces a major under-nutrition of vitamin A. Vitamin A deficiency affect the eyesight of a person. The other example for over-nutrition is extreme overweight or obesity. This happens when a person intake more energy rich food and is not able to use up it in activities this results in accumulation of fat in the body to increase weight. With constantly increase in weight the person becomes obese.

CHECK YOUR PROGRESS

Q. 1. List the three functions of Food.

Ans. Food supplies the fuel or energy needed to perform the many tasks of everyday living. We need energy to think, breathe, walk, sit, speak and even sleep. The functions of food are divided into categories such as:

1. Physical function of food: We get energy from carbohydrates, proteins and fats. It is important that we eat enough food to supply all our needs. If we don't, we will feel tired and listless. Having no energy can be compared to a car that has run out of petrol. Food provides the materials needed to build, repair and maintain body tissues. Proteins, fats and minerals are the best nutrients for growth. Growing bodies need extra amounts of these nutrients. Every person, whether growing or not, is going through a continual repair process of replacing injured or dead cells. It is food that supplies the nutrients necessary for this process. Food supplies the substances that help regulate the body's processes. Water, vitamins and minerals help regulate breathing, the nervous

system, digestion, blood circulation and the elimination of waste products from the body. They help keep all the systems in the body working properly. Vitamins, minerals and protein keep the body's tissues and organs healthy. Healthy organs are less likely to be attacked by disease.

2. Social Function of Food: Food is served almost on all social events like marriages, parties, get-together, official meetings etc., in the form of tea, breakfasts, banquet, dinner etc. On all these occasions, food indirectly serves as a powerful and effective instrument for developing social rapport. Besides other functions, food satisfies certain emotional needs also. Traditional habits are characterized by certain foods, which are pleasing to persons of one culture and same are served invariably to fulfil social and emotional needs of that culture or society.

3. Psychological Function of Food: Foods satisfy certain emotional needs of human beings and act as a source of security. An infant learns security from the way his mother feeds him. Similarly, a growing child gains confidence and a feeling of belonging, when he knows there is food in the house and he will be fed. People feel reasonably secure, when they have enough food stored up to take care of them during scarcity. Food is also an outlet for emotion. As a relief from tension, one may not eat or over eat. For some people, loneliness and boredom are relieved by continuous nibbling at food. Food is also used as a weapon, when an insecure child refuses to eat, thereby drawing the attention of the parents especially the mother.

Q. 2. List four aspects of the study of Nutrition.

Ans. Nutrition is the scientific branch of food. In other words we can say that through nutrition we come to know of what is happening to the food once it enters the mouth. Following are some of the aspects of nutrients:

1. Food and Nutrients: Nutrition is the provision, to cells and organisms, of the materials necessary (in the form of food) to support life. Many common health problems can be prevented or alleviated with a healthy diet. A poor diet can have an injurious impact on health, causing deficiency diseases such as scurvy and health-threatening conditions like obesity.

2. Concept of Balance: All of us should have well balanced diet to prevent him from infections and diseases. A balanced diet has all the nutrients required in correct proportions. Excess of one nutrient will create an imbalance and will prevent the other nutrients to work in the body.

3. Social Implications: Food plays a central role in the social and cultural context as it is considers a life giver. There are specific qualities attached to specific foods such as satvik food increases intellectual capacity, creativity and energy in an individual where as tamsik food stimulates passion. Though modern theory does not follow these thoughts as in a restaurant everybody eats everything sitting next to each other.

4. Psychology of Eating: The person's reaction to food majorly depends upon his attitude towards food, or towards the person offering food or the eating pattern followed by people around him. Sometimes one loves something to eat but just because it has been served by the person who he can't stand he will not eat the food. On the other hand sometimes the food advertisements are so attractive that even knowing its harmful effect the person can't resist eating that.

Q. 3. Define Health.

Ans. Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. Health' is an elusive word. Most people who