

ADVANCED NUTRITION I

BND-107

FINAL EXAMINATION: SECTION 1

TRUE OR FALSE: Please circle the correct answers on your Answer Sheets **ONLY**, found on the last page of Section 1.

1. Food is defined as any substance, the elements of which is convertible into the constituent matters of the tissues and fluids of the body, and is employed by the organism in the performance of its function.
2. According to their chemical compositions, foods are classified as : (1) proteins; (2) carbohydrates; (3) hydrocarbons (fats and oil); (4) salts (organic), and (5) vitamins.
3. When protein digestion is completed the protein has been broken down into simpler compounds known as chromo-proteins.
4. The various amino-acids are specific in their functions; they are not interchangeable. Of the twenty-two amino-acids, only ten or twelve are regarded as essential or indispensable. Tryptophan, tyrosine, lysine, cystine, glutamic acid, histidine and ornathin are among the essential amino-acids. If the diet supplies the essential amino-acids in adequate quantities, growth, maintenance, and reproduction are normal. If one or more of these is lacking or deficient, this is not the case. Examples: deficiency of valine in the diet of young animals stunts growth and development to a remarkable degree. If lysine is lacking in the diet, there is more or less maintenance with no growth. However, no matter how much protein and other elements are supplied in the diet, if lysine and tryptophan are lacking, life soon comes to being.
5. Fat serves as a protection and as a packing and support for organs, forms emulsions and lubricants, serves as storage for reserve "fuel," enters into the constituents of the walls of the body's cells, and is an essential element of the nervous system. Lecithin, a widely distributed

fat is very important in human nutrition, being an essential ingredient of the brain and nerves and also of the semen. Lecithin contains, besides the fatty acids, phosphorous. Insufficient fat tends to lessen nervous efficiency..

6. Calcium constitutes more than 49% of the mineral elements of the human body. Much of this is contained in the bones and teeth. It is also an essential of the blood and muscles. It hardens the bones and teeth, strengthens muscles, coagulates blood, causes the heart to beat and counteracts acids. The richest sources of calcium in order are: Savoy cabbage, kale, lettuce, dandelion (if young and sweet), cabbage, okra, celery, tomatoes, strawberries, blackberries, oranges, and nuts such as almonds, beechnuts, brazil nuts, pine nuts, filberts, and pecans.
7. If the amount of dissolved solids within and without the cell is equal, so that internal and external pressures are equalized, the cell remains normal. It falls very largely to the minerals of food to maintain this state of osmotic equilibrium.
8. Iodine is the chief constituent of the red blood cells and enables man and animals to take in oxygen. It gives color to the blood and complexion. The presence of copper seems to be essential to the assimilation of iodine. Nature stores up iodine in the liver to guard against deficiency. The richest sources in order are: sorrels, leeks, bulbs, spinach, small radishes, asparagus, strawberries, grapes, watermelons, gooseberries, and many nuts.
9. Vitamin E: an anti-sterility vitamin that is supplied to energize and potentize the reproductive glands. Chief sources are found in green leaves, germs of seeds, olives, oils of vegetables and nuts, avocados, and lettuce.
10. To secure an adequate supply of all needed vitamins, it is not necessary to know the amount of each vitamin contained in the food consumed; one need only to have a broad understanding of what constitutes the so-called "protective foods." All that is needed is a variety of a daily, fresh supply of uncooked fruits and vegetables taken in abundance. All of the vitamins and minerals ever needed for health are in these foods.

11. McCullum's experiments have shown that some foods will sustain growth while others will not. It is assumed that those foods that sustain growth and development contain substances to which the term vitamin has been applied. These substances are found abundantly in spinach, lettuce, cauliflower, cabbage, celery and milk. All of the refined foods ... are absolutely lacking in this respect. They will neither sustain nor promote growth. Grass and grass seeds, oranges, lemons, grapefruits, tomatoes, in fact all fresh fruits and green vegetables, all of which are very low in caloric value, are rich in growth promoting elements..
12. Feeding, when based on the caloric or fuel value of foods, leads the patient to be stuffed with fuel foods that are deficient in the other and more vital elements. These patients are forced to eat beyond their digestive capacity, in an effort to feed them the standard amount of calories. Hospital diets based on calorie computations are inadequate. Inactive people's "needs," say dieticians, are 2,000 calories a day; the moderately active require 3,000 calories a day; and the vigorously active person needs 6,000 calories a day. Not only is this standard based on faulty experiments, but it fails to take into account the emotional and physical limitations of the individuals' efficiency in utilizing the foods eaten, and the capability of absorbing and assimilating metabolically. This philosophy is ridiculous, as to say that a man at the age of twenty should be able to run a hundred yards in ten seconds. Without a standardized humanity, there can be no standardized diet.
13. In plant life and growth the Law of the Minimum has long been known. If perfect growth is to be procured in plants, they must find a certain minimum of each of several elements in the soil in which they are grown. If only half the needed amount of potassium, for example, is present, then, regardless of how abundant all the other soil elements may be, their normal utilization is reduced by one-half. The rate of growth of the plant and its ultimate development are correspondingly depressed. This is the Law of Minimum.
14. The effort to supply us with isolated vitamins and minerals is essentially a medical, rather than a trophologic procedure, and harks back to the antiquated notions that there are "specific diseases," having specific causes and requiring specific remedies. Every tissue-

builder is dependent upon all the others. The decisive factor in development is not so much the absolute quantity of the various food elements in the diet, but their relative proportions. The diet must contain a sufficiency of all essential food elements, but there must be no great excess of any of these.

15. To secure the highest possible development from food, it must be adequate in every respect. All of the food nutrients must be present in sufficient quantities and in due proportions and in digestible and assimilable, that is, available, form. This adaptation in the food is relatively more important while the child is growing most rapidly, and less important as the birth period, is receded from. Suitable variety and proper blending of foods, therefore, cannot be ignored, if we desire the highest vigor and greatest development in our children. ... Knowledge of correct feeding is needed by mothers.
16. Animals cannot use soil materials, nor can they synthesize carbohydrates out of carbon and water. For the same reason that they cannot utilize the minerals of the soil, but must receive them in the form of organic salts resulting from plant processes, they cannot utilize drug minerals or the inorganic salts produced in the chemical or pharmaceutical laboratory. Synthetic vitamins are no more useful than are the inorganic salts offered by the chemists. Animals are dependent upon plants for organic foods for proteins, sugars, starches, fats, organic salts, and vitamins. All foods come either directly or indirectly from the plant kingdom.
17. Elements are available only in certain forms, and we must draw minerals from foods. In like manner we must draw our vitamins from foods. Synthetic vitamins are as useless as earth salts before these have been organized by the plant.
18. There is no doubt that the inorganic salts of the drug store may be absorbed into the body, and perhaps some of them may be employed to a limited extent in such purely chemical processes as the neutralization of acids. But they cannot become parts of the teeth, muscles, nerves, blood or glands of the body. (In other words, they are not part of the nutritive metabolic process).

19. It takes months for sunshine to perfect the nut and when it is completed, it is a veritable storehouse of minerals and high grade protein, emulsified oil and health imparting vitamins. Packed in a nature-made, waterproof and air-tight shell, the nut meat comes to us clean and wholesome. Hermetically sealed, the nut does not become contaminated and spoiled as do meat, for example. Nuts are free from waste products, are aseptic and do not readily decay either inside the body or outside of it. They are not infested with parasites (trichinae, tape-worm, etc.) as are meats.
20. In general, green vegetables are the richest sources of minerals and vitamins. Practically all green leaves are rich in vitamin C. Cabbage is rich in B; cucumbers are rich in C, as is the bell pepper. Leaves contain an excess of bases (alkali salts), while seeds contain an excess of acids. Even nuts, with perhaps one or two exceptions, contain an excess of acids. Green leaves also contain small quantities of a very high grade of proteins.
21. Cereals are deficient in sodium and calcium; they are also poorly supplied with organically combined sulphur and with bases generally. They contain a super abundance of inorganic acid-formers and of potassium. The cereals are also poor in vitamins A, B, and C, their poverty being more marked in proportion to the fineness of the flour. Finally, the proteins of the cereals are always inadequate; they are lacking to some extent in the ringed amino-acids, and are especially poor in lysine and cystine.
22. Cereal starches require eight to twelve times as long to digest as does potato starch. Grierson found that two full hours are required to digest the starch of wheat, corn, and rice, and eighty minutes to digest the starch of oats, whereas the same amount of potato starch digests in 30 minutes.
23. One of the most common adulterations put into milk is the so-called "alkalizers." These are used mostly during the summer months to mask the taste of milk produced by the growth of bacilli in it. This enables the milk industry to sell old milk as "fresh milk."
24. Excessive water-drinking tends to water-log man's tissues and fluids and to lessen the vitality of his cells. The power of the blood to absorb

and carry oxygen is lowered, and the body is weakened. One sweat's more when he drinks more, but excessive transpiration is weakening.

25. The philosophy of drinking large amounts of water all day long to keep ourselves hydrated while flushing out toxins is unsound from first to last. The body performs the act of toxin elimination, not the water-flushing habit. Our bodily secretions can satisfy the demand for "thirst," while the large water-drinking habit will not. Bodily secretions will prevent putrefaction and fermentation in the digestive tract while drinking large amounts of water will favor these processes by diluting and weakening their digestive powers. Excessive water-drinking will also prevent our body secretions from *internal tissue reabsorption*.
26. Some condiments act as irritants, and as a consequence induce inflammation in the digestive tract. Its continued use will result in the hardening (toughening) of the mucus lining of the alvine canal. This hardening renders the delicate membranes less sensitive to their irritating qualities, but cripples the efficiency of the membranes. Cayenne or red pepper is about the fieriest of all condiments. It burns and "stimulates" these organs, which are followed inevitably by a reaction with a corresponding lowering of the vital tone of these same organs. The effect of condiments is the opposite of what it is popularly supposed to be. They depress and hinder instead of aiding digestion. The taste of condiments is repulsive to infants and those unaccustomed to their use.
27. Dr. Hoffman, of the U.S. Army, stated: "The Indians frequently visited our camp. On many occasions I myself have offered them a surplus article of food left by us after our meals. Soups and meats, cooked in the usual way and seasoned with salt, they would invariably refuse after tasting, saying in their own language, it was not good." He says that even when they were hungry, they would refuse foods in which they could taste salt. "In other bands of Indians that we saw, it (salt) is an article of medicine rather than an article of food." Describing these men he says: "A more athletic, hearty, stout, and robust class of men cannot be found in the world than these very Indians of whom I am writing, who never used salt in any shape. Many of them are over six feet tall, others of medium size, and they will endure more hardship, stand more fatigue, have better lungs,

suffer less from sickness, and live longer on a general average than the white race that has all the conveniences.”

28. Edinger showed by experiment that potassium rhodanate is the antiseptic principle in saliva. He found that three parts of saliva to the thousand will kill the bacilli of cholera morbus in one minute, while nine parts to the thousand will kill diphtheria germs in the same time. Here is a constantly produced antiseptic powerful enough to destroy any germ, yet harmless to the body. Chew food well, and the saliva will aid in preventing decomposition.
29. There are four kinds of glands which secrete intestinal juice. They are: crypts of lieberkuhn, Brunner's Glands, Solitary Glands and Pyers Patches Glands. The glands of lieberkuhn secrete an intestinal juice containing several enzymes such as erepsin (proteolytic), invertase (amolytic), maltase (amolytic), and lactase which digest milk sugar. Brunner's glands secrete a juice containing the enzyme enterokinase, which acts upon the trypsinogen of the pancreatic juice as it enters the duodenum and converts this into the powerful protein-splitting enzyme, Trypsin. Chymosis, which coagulates milk, is also contained in succus-interucus.
30. The type of juice adapted to the digestion of one type of food not only proves almost valueless in digesting another type of food, but it will also show that the longer, one type of food is eaten, the more efficient digestion becomes. The way to learn to digest a food that is difficult for us to digest is to continue to eat it. If pepsin or hydrochloric acid is lacking in the diet, not abstinence but the indulgence of eating proteins will increase digestion. There are, of course, limitations. Over-stimulation will have the opposite effect. Bad combinations of foods will lower the ability of digestive juices to do their work, and also the vitality of the whole organism.
31. Nervously depressed people have good psychic secretions, but are usually chronic dyspeptics. Observations made on mental patients, particularly those suffering from the so-called “maniac depressant” psychoses, have shown that their psychic secretions are good out of his stomach, two hours longer than under normal circumstances.

32. Tasting food regulates the process of nutrition by cutting off the appetite for one food principle after another, as the body has received a sufficiency of each particular item. The sense of taste is an instinctive regulator of nutrition and, when normal or unperturbed, is a dependable guide in determining the quality and quantity of food needed, provided one eats natural foods and does not disguise them with dressings and condiments.
33. Temperate eaters have good digestion and are never aware that they have stomachs, while heavy eaters are always feeling faint, thirsty, bloated, troubled with acidity, eruptions, diarrhea, constipation or some other disorder of the digestive system.
34. A person comes home from a day of hard work. He is ravenous. Just as he is about to sit down to begin eating, someone brings him news of the loss of a loved one through death, or of the loss of a fortune. Instantly, all desire for food is gone. We see here that the person's mental state is telling him not to eat, and that the body needs all its energies to meet this new circumstance, and it requires much energy to digest the food. Food eaten under such conditions will be digested, and most likely will ferment and poison the body.
35. Man is so constituted that he can do well only one thing at a time. A hearty meal makes him stupid because all of his available energy is employed in an effort to digest such a load. Eating is a business in itself, and should be divorced from all other mental and physical activity. No meal should ever be eaten until after the body has had sufficient mental and physical rest to gain "physiologic poise" and readiness for digestion.
36. In the ancient biblical Hebrew writing (Exodus), we read: "And Moses said, 'Jehovah shall give you in the evening, flesh to eat, and in the morning, bread to full,' and Jehovah spoke unto Moses, saying, 'At evening ye shall eat flesh, and in the morning ye shall be filled with bread.'" This is the earliest record of the practice of eating proteins and carbohydrates at separate meals.
37. "What nature has combined, nature can digest. What man may combine, he often finds indigestible." Dr. Shelton was eternally right

when he repeated, on more than one occasion, that “nature never produced a sandwich.”

38. The presence of fats in the stomach increases the production of chemical juice. Fatty acids increase the activity of the gastric glands and the gastric juice, increase the amount of pepsin and hydrochloric acid, and may increase the entire digestive tone by more than 50%.
39. Lemon juice, vinegar, pickles, etc., when mixed with food, increase hydrochloric acid. Just as acids aid with the secretion of hydrochloric acid, so sodium or alkali aids with pepsin secretion and increases gastric acidity. Gastric juice is not poured out in response to the presence of acids in the mouth and stomach.
40. When at a friend's table, do not deliver a homily on food combinations, and critically select and refuse, causing the host embarrassment. Take what is offered and do not think about it unless sick or uncomfortable, then do not eat.
41. Bread and butter taken together cause no unpleasantness. But if sugar, jam, or marmalade is added, trouble may follow, as the sugar will be taken up first, and the conversion of the starch in the bread into sugar is then delayed. Mixtures of starch and sugar invite fermentation and its evil diseases.
42. Starches do not combine well with green vegetables, fats and oils, but well with proteins, fruits, acids, and sugars.
43. Fats can delay digestion up to twelve to sixteen hours.
44. Cheese combines best with green vegetables and starches, seeds, other proteins, fats and oils, and acid foods.
45. The only reason that the great mass of poisons arise out of the decompositions of our foods in our digestive tracts, is because nature has provided us with constitutional reserves with which to resist the recurrent accidents and bad habits, along with life's emergencies. These reserves are meant to extend our lives until we're 100 years of age, unless we borrow from them and never pay back. In that case, we are lucky to reach 70 years of age. The alkaloids and alcohols, with which gastro-intestinal decomposition charges our bodies, rob us of

our reserves, greatly weaken our vital resistance, and sooner or later produce a state of physiological collapse. We permit the silent, continuous leakage of our vital reserves until, by its sapping influence, we are brought below the line of safety. Our powers of repair and restitution are bankrupted, and we are unable to come back.

46. Cooking destroys the elementary plant form, tearing down its structure, changing its composition and bringing about certain destructive changes in the element groupings in all foods, returning part of these elements, especially the organic salts, to their inorganic and, therefore, useless state, so that a large part of their mineral content is lost.
47. Dr. Shelton declared on the effects of cooking: "For even the most approved modes of grinding, bolting, leavening, cooking, spicing, heating and freezing our foods are, strictly speaking, abuses of our digestive organs, and not of our digestive organs only, but of the whole body. Cooking is the oldest and most widely used method of denaturing food."
48. Fresh foods, green foods, whole natural foods, unprocessed, unrefined foods, foods that have not lost their substances nor had their values deteriorated by heating, drying, cooking, canning, and refining processes, are full of the elements of superior nutrition.
49. Cooking, bleaching, canning, preserving, and drying (with the possible exception of sun-drying) of fruits, vegetables, grains, milk, meat and other foodstuffs, are all denaturing processes and have much the same results as the milling of wheat or the polishing of rice. "Since prolonged heat is in any case injurious," says Berg, "it is obvious that the drying of nutrients at a raised temperature must be extremely disadvantageous."
50. "A common, but unrecognized cause of innutrition is toxemia resulting from impaired elimination. This toxic state of the blood and lymph is back of the chronic disease of the tonsils ..." tooth decay, tuberculoses, sinus problems, kidney problems, skin eruptions, constipation, diarrhea, colds (catarrh) etc., ... which are "listed as a 'physical cause' of malnutrition. Toxemia deranges and perverts nutrition. It is due to anything that overtaxes the vital or nervous

powers and checks elimination. ... Malnutrition lays the faulty anatomic foundation of various organic diseases in later life." The remedy is a complete overhauling of the child's life, as well as that of adults.

ADVANCED NUTRITION I

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FINAL EXAMINATION: SECTION 1

STUDENT ANSWER SHEET

1.	T	F	16.	T	F	31.	T	F
2.	T	F	17.	T	F	32.	T	F
3.	T	F	18.	T	F	33.	T	F
4.	T	F	19.	T	F	34.	T	F
5.	T	F	20.	T	F	35.	T	F
6.	T	F	21.	T	F	36.	T	F
7.	T	F	22.	T	F	37.	T	F
8.	T	F	23.	T	F	38.	T	F
9.	T	F	24.	T	F	39.	T	F
10.	T	F	25.	T	F	40.	T	F
11.	T	F	26.	T	F	41.	T	F
12.	T	F	27.	T	F	42.	T	F
13.	T	F	28.	T	F	43.	T	F
14.	T	F	29.	T	F	44.	T	F
15.	T	F	30.	T	F	45.	T	F

46. T F

47. T F

48. T F

49. T F

50. T F

ADVANCED NUTRITION I

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FINAL EXAMINATION: SECTION 2

MULTIPLE CHOICE: Please circle the correct answers on your Answer Sheets **ONLY**, found on the last page of Section 2.

1. “_____ and _____ nutrition,” says Dr. Trall, “implies the assimilation of nutriment material to the structure of the body, without the least excitement, disturbance, or impression of any kind that can properly be called stimulating. All stimuli, therefore, is directly opposed to healthful nutrition, and is a source of useless expenditure opposed to healthful nutrition, and a waste of vital power.”

A. Good, perfect B. Perfect, good
C. Pure, perfect D. Pure, good
2. It is the _____ view that normal metabolism must be based on a normal mode of nutrition, which involves not only the kind, quality and amount of food eaten, but also, very importantly, the kind and amount of work and “sweat of the brow” that is expended in earning this food.

A. Naturalist’s B. Hygienic C. Holistic D. Naturopathic
3. During life two simultaneous processes are in continual progress: A _____ up and _____ down process. These two processes taken together are called _____.

A. Building, breaking, metabolism
B. Breaking, building, metabolism
C. Metabolism, breaking, building
D. None of the above

4. _____ is any substance which, when taken into the body, can be used by it for the replenishment of tissue growth and repair, and for the performance of organic function.
- A. Vegetables B. Fruits C. Meat D. Food
5. The essential needs of man's diet are: _____, _____, _____, _____, _____, and _____.
- A. Proteins, fats, carbohydrates, minerals, vitamins, supplements
 B. Minerals, vitamins, cellulose, supplements, blood, tissue
 C. Proteins, Fats, Carbohydrates, Minerals, Vitamins, Roughage
 D. None of the above
6. Fructose and levulose are derived from _____ and _____.
- A. Fruits, honey B. Starches, fruits
 C. Carbohydrates, honey D. Starches, honey
7. _____ have long contended that grains form no part of man's diet.
- A. Homeopathics B. Naturopathics
 C. Naturalists D. Hygienists
8. _____-_____ serve specific functions; a deficiency of tryptophan in young rats leads to cataract and blindness and poor development of tooth enamel. Tyrosine is thought to be essential to the production of the hormones adrenalin and thyroxin. A reduction of the number of spermatozoa is said to result from a deficiency of arginine.
- A. Proteins-starches B. Amino-acids
 C. Starch-proteins D. Fat-proteins
9. _____ proteins are proteins produced from other proteins in various ways, but chiefly by means of digestion or hydrolysis, that is, by the action of digestive enzymes and by acids and alkalis.
- A. Derived B. Complete C. Compound D. Simple

10. Food elements are the various distinct compounds that exist in foods and that are after digestion, _____ as nourishment for the body.
- A. Incomplete B. Inorganic C. Organic D. Utilized
11. Certain organic compounds of carbon that are produced by plants in the process of growth from carbon, hydrogen, and oxygen, with the oxygen and hydrogen in proportions to form water. These carbohydrates are known as _____ and _____.
- A. Fruits, cereals B. Starches, sugars
C. Disaccharides, glucose D. Dextrose, glucose
12. According to their functions, foods are divided into _____.
- A. Fuel and energy foods such as carbohydrates, fats, and proteins.
B. Building Foods such proteins, salts, and water.
C. Regulators of body processes by minerals, vitamins, and water.
D. All of the above
13. Amino-acids serve as _____ stones, out of which the proteins characteristic of the various cells of the body are synthesized.
- A. Constructing B. Building C. Structural D. All of the above
14. Foods rich in hydrocarbons are _____ and _____.
- A. Fats, proteins B. Fats, oils C. Oil, proteins D. All of the above
15. _____ acids are supplied by the fats in our diet; fats also contain fat soluble vitamins and minerals. Large quantities of fat are not required, but a small quantity daily is essential to normal development and maintenance, and to good health.
- A. Lipase B. Fatty C. Trans-fatty D. Fat-soluble

16. While animals are capable of synthesizing fats out of starches and sugars, they are not capable of taking hydrogen, oxygen and carbon and synthesizing fats out of these.
- A. True B. False C. Sometimes D. Yes and no
17. Vitamins and _____ salts are distributed throughout nature and are present in varying quantities in all food substances. Fruits and fresh vegetables are especially rich in them.
- A. Organic B. Inorganic C. Mineral D. Vitamin
18. Antikeratinizing vitamin _____ is a fat-soluble vitamin and is found chiefly in green leaves of plants, tomatoes, butter, sweet potatoes, yellow corn, green peas, cream, egg yolk, palm oil, broccoli, kale, apricots, and peaches, and there is thirty times as much of this vitamin in the outer green leaves than in the inner, white part of the plant.
- A. E B. K C. A D. B
19. Professor E.V. McCollum showed that animals deprived of _____ lose the maternal instinct, refuse to suckle their young, do not build a nest for them, and even eat their young. Their mammary glands do not develop properly, and they are unable to secrete proper milk for their young.
- A. Manganese B. Magnesium C. Vitamin E D. Vitamin U
20. _____-colored vegetables contain more vitamins and minerals. Sunshine favors vitamin storage. The green outer stalks and leaves of lettuce, cabbage, celery, etc; are more abundant in vitamins than the pale, inner leaves and stalks. The green leaves of tubers possess more vitamins and minerals than the tubers.
- A. Green B. Light C. Dark D. None of the above
21. Due to greater calcium and phosphorus metabolism in early life, vitamin _____ is most needed in the first year of life. Mothers

need it during the last two months of pregnancy and during lactation. Sunbathing by mothers will also be of great value.

A. E B. D C. A D. B

22. Fresh fruits and vegetables, and nuts and seeds of all kinds will supply all the _____ needed.

A. Lactoflavin B. Riboflavin C. Vitamin B² D. B, C

23. One of the first symptoms of vitamin B deficiency is loss of _____.

A. Vitality B. Muscle Strength C. Appetite D. Thirst

24. The vitamins of the B complex are fundamental to life, being found in all living things. It is difficult to differentiate among the disturbances caused by a deficiency of the individual members of the complex, and it has more than once been the case that a deficiency attributed to a lack of one of the group was later found to be due to a _____ lack. Beriberi is the most outstanding example of this statement.

A. Singular B. Double C. Multiple D. Reduced

25. The capacity of any given cell for work is impaired in proportion to the degree of _____ starvation. The result of _____ deficiency is destruction and the greater the deprivation, the more rapid the development of deficiency states.

A. Vitamin B. Vital factor C. Multiple factor D. Vitamin D

26. _____, in combination with chlorine, is a principal constituent of the blood and lymph. It renders the lime and magnesia salts of the blood more soluble and prevents their deposit in the body. It prevents a too-ready coagulation of the blood, being able to re-dissolve coagulated fibrin and return it to the liquid state. It is an essential ingredient of the saliva, pancreatic juice and bile. _____ phosphate and _____ carbonate in the blood enable the body to excrete carbon-dioxide. There are about 3 ounces of _____ in a body weighing 150 lbs. The chief sources of supply are in the order named;

celery, spinach, Swiss chard, Romaine lettuce, tomatoes, red beets, pumpkins, carrots, strawberries, pomegranate, black figs, apples, avocados and bananas.

A. Sodium B. Potassium C. Calcium D. Magnesium

27. _____ is necessary for effective metabolism and especially promotes respiratory exchanges and physical growth. It promotes efficient mental development. A severe shortage before birth results cretinism. An inadequate supply may produce anything from imbecility to mere mental dullness. It is required in the pregnant condition, and antenatal clinics bear this point in mind. It's needed in adolescence for the development of the reproductive organs, particularly in females, in whom the change-overtakes place more rapidly than in males. Dry skin and falling hair frequently mean thyroid deficiency. It's required for digestion, assimilation, and combustion of fats. When a shortage occurs the fats cannot be satisfactorily dealt with, and it is stored in the subcutaneous tissues. Many cases of obesity may be occasioned in this way. It's required for the metabolism of calcium. It's needed to enable us to resist the invasion of microbes, and to render harmless the toxins (poisons) they produce.

A. Thyroxin B. Fluorine C. Iodine D. Manganese

28. The estimated requirement for vitamin A is _____ units. More is required by infants and children and by pregnant and nursing mothers, who need fruits and vegetables.

A. 5,000 B. 10,000 C. 50,000 D. 45,000

29. _____ are the mineral base forming alkaline elements.

A. Magnesium, iron, manganese, copper, zinc
B. Potassium, sodium, calcium, lithium, nickel
C. All of the above
D. Potassium, sodium, phosphorus

30. _____ are the mineral acid-forming elements.
- A. Phosphorus, sulphur, silicon, chlorine
 - B. Fluorine, iodine, arsenic, bromine
 - C. All of the above
 - D. Sulphur, zinc, arsenic, phosphorus
31. _____ is found in exceedingly small quantities in different organs of the body, but especially ore so in the insulin of the pancreas, of which it may be an active ingredient, just as iodine is the active agent in thyroxin of the thyroid gland. _____ may be essential for the proper oxidation of sugar.
- A. Zinc
 - B. Arsenic
 - C. Copper
 - D. Nickel
32. Vitamin P, or _____ (nicotinic acid) deficiency is credited with causing pellagra, but sufferers are deficient in many other food factors. Sources of this vitamin can be found in fruits, vegetables, nuts, and seeds, and supply all that the body needs.
- A. Thiamine
 - B. Riboflavin
 - C. Pyridoxine
 - D. Niacin
33. _____ is found in the liver, bile and blood, and seems to be essential to the assimilation of iron and the manufacture of hemoglobin. There are about 15 grains of _____ in the human body weighing 150 lbs. This mineral is found in celery leaves, lettuce, roots of salsify, carrots, turnips, beets, potatoes, green beans, pumpkins, cucumbers, tomatoes, pears, apples, grapes, olives, bananas, dates, oranges, chestnuts, peas, soybeans, lentils, almonds, and hazelnuts.
- A. Copper
 - B. Zinc
 - C. Nickel
 - D. Arsenic
34. In a simplified sense, we may consider the blood and lymph as liquids in which solids are held in solution, much as salt is dissolved in water. The cells, which are bathed at all times in lymph, are also semi-fluid with dissolved matter in them. If the lymph outside the cells contains much dissolved solid, as compared to that within the cells, the cells shrink in size. If there is more dissolved solid within the cell than

without, the cell expands and sometimes burst. In either case the result is _____.

A. Nutritional B. Anutritional C. Pathological D. Organic

35. Vitamin _____ is a heat-stable factor that prevents loss of weight in pigeons.

A. B¹ B. B⁵ C. B⁶ D. B⁷

36. No drug salts can be made to take the place of those found in food. As Dr. William H. Hay says: "Nature provides all her chemicals for restoration of the body in the form of _____, organic forms, and man has for a long time sought to initiate her in this, but he has not been so very successful that we are now able to insure the recouping of the mineral losses of the body by any artificial means, and must still depend on nature's _____, as found in plant and fruit." Well or sick, no compound of the chemist, druggist or bio-chemist can recoup mineral losses.

A. Crystalloids B. Colloids C. Substance D. 6-Factors

37. Vitamin C, the anti-scorbutic acid, is a water soluble vitamin which is supposed to prevent scurvy or scrobutus. It is chiefly found in fresh fruits and to a lesser degree vegetables lack of it produces _____.

A. Swelling and tenderness, and teeth become loose.
B. Spongy, hemorrhagic, and painful condition of gums.
C. Swelling of ribs and fracture at junctions of bones and cartilage.
D. All of the above

38. Hygienists have long advised to "_____ the sunshine," that is sun-kissed foods. Nature irradiates her foods during growth, as the sun's rays stream down upon orchard and garden. The essential work in food production, she does well. To irradiate white flour or other denatured foods and render them wholesome is totally absurd. These foods lack calcium, iron, sodium, etc.

A. Kiss B. Love C. Eat D. Absorb

39. _____ vitamins are only imitations. They are useful only in the presence of elements of food stuffs that are almost invariably deficient in the usually "unusual American diet." Better nutrition may be had by a better diet, not by eating vitamin pills.
- A. Synthetic B. Unreal C. Fake D. Unknown
40. The _____ store pill-eater is led to believe that he can have health by taking these synthetic "vitamins," without the necessity of removing the many causes of his disease. Taking vitamins to "cure" disease and neglecting to correct the habits of life that have produced and are maintaining that disease, is the same in principle, and is equally as ridiculous as taking drugs for the same purpose while ignoring the habits of life.
- A. Health B. Drug C. Vitamin D. Mineral
41. _____ (excess of vitamin) A, D, and K exists in vitamin literature, and we are told that "certain vitamins may possess pharmacologic actions which are not apparent when administered in the small quantities, usually provided in nutritional experiments." These cases are seen in those dosed with drug "vitamins." There is no such thing as a pharmacologic action.
- A. Hyper-vitaminosis
B. Hyper-provitaminosis
C. Hypo-vitaminosis
D. Avitaminosis
42. Organic salts are in the _____ form. _____ iron or calcium or phosphorus are usable. Inorganic salts are crystalloids and are not usable. Crude minerals, after they have been organized by the plant kingdom into highly complex compounds, are assimilated and used by the body, but taken in their elementary state, are injurious, some of them even deadly poison, to the body. The plant takes the elements of the soil and synthesizes them into acceptable compounds. The animal is limited to these compounds.
- A. Raw B. Crystalloid C. Unnatural D. Colloidal

43. Salts built up by plants we shall call _____ salts, and those built up by other processes we shall call _____. The chemist says there is no difference between both for bodily use, but the animal body continues to make a distinction by drawing a sharp line of demarcation between the chemist and natural plant sources.
- A. Inorganic, organic B. Organic, inorganic
C. Anabolic, catabolic D. None of the above
44. _____ acids are those acids that result from the synthetic activities of plants and animals, distinct from decomposition acids such as uric acid, etc. Organic acids are those acids found in fruits and vegetables such as acetic, citric, malic, oxalic acids, etc.
- A. Organic B. Synthetic C. Inorganic D. Real
45. _____ is a necessary constituent of the bones and nerves supplied only from plants, a rank poison in inorganic form. It affects the jaw-bone growth and structure.
- A. Calcium B. Phosphorus C. Potassium D. Manganese
46. Extracting vitamin or mineral substances from plant foods greatly _____ their food values. It is also a mistake to assume that these chemical substances constitute nourishment.
- A. Impairs
B. Enhances
C. Increases
D. Magnifies
47. Failure of growth on certain diets may be considered a deficiency disease. Such diets contain all the needed food elements and growth (just barely), and growth is determined by the elements least bountifully supplied. This is what is meant by the Law of _____.
- A. Adaptation B. Life C. Minimum D. Toleration
48. After the alkaline salts have been consumed in neutralizing the acids in the foods themselves, the residue of these are available for storage

in the body as a reinforcement of its alkaline reserve. The availability of the alkaline elements is proportioned to their _____ over the food acids. This is the reason that our diet should at all times be preponderantly _____.

- A. Alkalinity, alkaline
- B. Excess, alkaline
- C. All of the above
- D. None of the above

49. It is found that in harmony with the "Law of Minimum," in the case of proteins, the value of protein or mixture of proteins for structural purposes in the body is limited if one of the indispensable amino-acids is _____, or wholly lacking. If and when this _____ is remedied, a _____ supply of some other indispensable amino-acid constitutes a further limitation.

- A. All below
- B. Inadequate, Inadequacy, Inadequate
- C. Insufficient, Insufficiency, Insufficient
- D. Deficient, Deficiency, Deficient

50. Lack of _____ disturbs calcium metabolism. A lack of calcium or an excess thereof in the diet renders vitamin A of no effect. _____ are valuable only in the presence of each other. Calcium seems to be usable only in the presence of vitamin A.

- A. Minerals B. Vitamins C. Vital factors D. Complete substances

51. Experts putting their whole attention on vitamins are _____ other factors such as minerals, lifestyles, habits, and many others that come into play in Hygienic health and nutrition.

- A. Co-ordinating B. Using C. Including D. Neglecting

52. If _____ essential food element, which normally should compose one percent of the food eaten, is present in only half this amount then the body will only be able to utilize the other elements in tissue building in the same _____ quantity. The organic whole of the unit is official to animal nutrition. Not the sum total of the minerals

consumed, but their relative proportions determine the nutritive value of any given diet.

- | | |
|--------------------|---------------------|
| A. Many, increased | B. Few, reduced |
| C. One, reduced | D. Several, reduced |

53. The proper exploitation of both proteins and carbohydrates is determined by mineral metabolism, since they can be more readily oxidized in an alkaline medium than when an excess of acids is present. It has been repeatedly shown that an excess of _____, over acid-forming foodstuffs ingested, promotes the utilization of proteins. Zunts, of Berlin, showed that diabetics can more easily oxidize sugar if the body has an abundance of _____ at its disposal. Abderhalden performed investigations which showed that a diet rich in _____ is essential for the proper functioning of the hormones of the ductless glands.

- A. Minerals B. Vitamins C. X-Factors D. Bases

54. The _____ "action" of minerals, proteins, vitamins, etc., in the production of tissues and fluids in the body is called "_____ " action. The body makes correlated use of them. Knowledge of the "_____ " action of the food elements and vitamins is of vast importance and helps to make clear to us the Law of Minimum.

- | | |
|-------------------------------------|-------------------------|
| A. United, synergistic, synergistic | B. Living, vital, vital |
| C. Energy, stimulating, stimulating | D. None of the above |

55. To declare that man required a given number of _____ per day and to feed this, all the while ignoring the individual's condition, is the height of folly. In a state of nature, demand reaches forth to supply and satisfies itself. The _____ feeders force the supply even when there is no demand or when there is a lack of ability to properly care for the supply. Along with this, their standard of measuring food values wholly ignores the most important elements of the food, and the further fact that not all the food elements of the food that are combustible are burned in the body. Those proteins that are used in building new tissue are not used for the production of heat and energy, even if we assume that man derives his energy from food.

(NEXT PAGE FOR ANSWERS)

A. Foods B. Calories C. Minerals D. Vitamins

56. A man may starve to death on a high _____ diet of white bread, white sugar, white rice and refined fat. He will starve to death on such a diet while consuming more _____ each day than the standard calls for. Indeed, he will die quicker on a diet of this kind, than he will if he takes nothing but water.

A. Protein B. Fat C. Carbohydrates D. Calorie

57. Osborn and Mendell fed animals on a diet of denatured starches and fats, refined sugar and refined proteins, and found that when so fed they rapidly declined in health. The addition of _____ salts to the food was found to be absolutely valueless.

A. Organic B. Inorganic C. Mineral D. Food

58. The many functions of the body are _____ synergistic. The function of one part of the body is dependent upon the functions of _____ other parts. Feeding vitamin B, in certain forms of nervous trouble with the aim of remedying the nervous impairment and ignoring the correlated functions of the body that support nerve function, is doomed to failure. _____ of the "synergistic chemical actions" in _____ parts of the body must be adequately provided for before the actions of any part can be ideal. This is the thing that makes specific diets so unsatisfactory.

A. Entirely B. Totally C. All D. All of the above

59. Measuring food value by _____ ignores the body's mineral and vitamin needs. It gives no attention to the relative values of the various proteins, and overlooks the acid-alkali ratio of the diet. It wholly forgets the Law of Minimum.

A. Measuring cups B. Spoons C. Enzymes D. Calories

60. A table giving the caloric values and fuel values do not give _____ values to these foods. The body must be able to digest, absorb, assimilate, and metabolize them. If it fails to digest and absorb them,

it certainly cannot assimilate and metabolize them. The body can produce no heat by the oxidation of foods that pass out in the stools.

A. Nutritive B. Accurate C. Digestive D. Metabolic

61. We must lose our "test tube conception" of dietetics and learn to feed human beings. _____ is no chemical apparatus that can be manipulated, as can such a device in the laboratory. Theoretically, _____ may need a certain amount of protein, or a given number of calories, or a certain minimum of vitamins, but is _____ actually capable of digesting and absorbing anything? Feeding needs are a personal individual need, not a rule of thumb affair.

A. The fish B. Man C. The bird D. The penguin

62. Copp and others, investigating the nutritional factors in arthritis, found that it is essential to restore the calcium balance before recovery can take place. They found that when inorganic calcium salts or other basic salts in the inorganic form are given, these are rapidly _____ and are not _____ by the tissues. The bodies of animals can make use of salts only as these are prepared for them by the plant kingdom, a symbiotic dependence of great significance.

A. Assimilated, eliminated B. Assimilated, discarded
C. Eliminated, assimilated D. None of the above

63. Fruit acids and vegetable acids are beneficial only in their _____ forms or as acid salts. The artificially prepared acids found in soft drinks and in other forms, never produce the beneficial effects that one obtains from the _____ acids. Extracted acids are also not beneficial, but harmful. Fruit and vegetable acids should be taken only in the fruit or vegetable in which they were formed, or in the form of fruit juices and vegetable juices.

A. Inorganic B. Organic C. Cooked D. Various

64. Schussler's salts administered in the sixth decimal titration of homeopathic therapeutics as is the common way of giving them, is not used by the body. Homeopathic titration is not identical with the synthetic processes of plant life, and does not produce the peculiar

plant substances that are alone acceptable to the animal. These same facts apply to the many "cell salts," "vegetable salts," "essential foods," etc. All so-called biochemistry is the chemistry of the _____.

A. Living B. Healthy C. Dead D. Ignorant

65. Certain patients, during a considerable time on an acid-fruit diet, become _____, _____, _____, _____, and do not sleep well. These symptoms necessitate a change.

A. Tense, restless, irritable, nervous
B. Violent, irrational, emotional, unreasonable
C. Tense, restless, irritable, violent
D. None of the above

66. Sweet fruits are rich in alkaline minerals and vitamins, and organic acids. Their sugars are almost pre-digested and easily digested, and sustain the body with very little energy _____ in digestion.

A. Available B. Kept C. Conserved D. Expended

67. _____ fruits are usually taboo in hyperacidity, or more appropriately called acid fermentation, resulting from an excess of carbohydrates consumed, and if taken with other foods increases this condition, as these fruits interfere with the salivary digestion of other foods. In a few cases where there is a persistent sour stomach, a short fast is indicated to eliminate this condition. Acid fruits should be taken only after a gastric ulcer is healed.

A. Sweet B. Nutty C. Neutral D. Sub-acid E. Acid

68. Dr. Densmore advocated a non-starch dietary substituting _____ for starch foods. He claims they give us the greatest amount of nourishment for the least amount of digestive strain.

A. Fats B. Acid C. Sub-acid D. Sweet fruits

69. When the body gets _____ in any form, it is changed back into sugar before absorption from our digestive organs, and yet after

absorption some of this sugar is changed back into glycogen or "animal," which is stored in the liver, and to a lesser extent in the muscles, until it is needed as fuel for the muscles. Then, before it is actually oxidized or burned in the muscles this product must again be changed back to sugar.

A. Fats B. Proteins C. Starch D. None of the above

70. _____ acid is one of the most common forms of organic acid, and is found in grapes, mangos and tamarinds. This acid disappears during ripening.

A. Lactic B. Tartaric C. Sulphuric D. Citric

71. There are three classes of fruits which are classified according to the amount of sugar and fruit acid they contain, and these are _____ fruits.

A. Sweet B. Sub-acid C. Acid D. All answers

72. Nuts are a (n) _____ ash food, as are all proteins.

A. Alkaline B. Sub-acid C. Acid D. Sour

73. _____ protein has been proven to be of about equal value to those of grains and potatoes. "An abundant supply of _____," says Berg, "is a guarantee that the food will contain an excess of bases," although deficient in calcium salts and a poor growth promoter. With green vegetables, they make an adequate diet for children and adults. They are only fully ripened when the freckles are darker and become black.

A. Sweet Fruit B. Banana C. Sub-acid D. Apple

74. _____ are sweet fruit of the palm and excellent sources of sugar. They are richer than most fruits in protein, exceeding even milk, and are relatively high in minerals.

A. Dates B. Bananas C. Avocados D. Raisins

75. "Nuts are _____ proteins of the highest order," says Kellogg, "for building substances needed by the body." They furnish perfect _____, and are superior to cereals, milk and eggs.
- A. Incomplete, health B. Complete, health
C. Complete, protein D. Complete, food
76. The acid of _____ is chiefly citric with small amounts of malic acid. All _____, except cranberries, are excellent foods. The strawberry is rich in iron and lime, only to be excelled by green peas and fresh lima beans.
- A. Berries B. Fruits C. Oranges D. Apple
77. Dr. Gibson says _____ give sugar for the maintenance of fats and heat for the system; its organic salts to sustain the chemical composition and metabolic balance of the blood; its acids for breaking up tissue congestions, due to accumulation of waste matter.
- A. Fruits B. Nuts C. Cellulose D. Ptyalin
78. Drinking fruit juices at all hours of the day is a sure road to _____. Fruit juices are foods, not drink, and should be taken as foods.
- A. Health B. Ecstasy C. Indigestion D. Successful health
79. Vegetables abundant in alkaline, minerals and vitamins are richer in the green _____. They also contain a small amount of proteins of the highest quality.
- A. Vegetable B. Stock C. Roots D. Leaf
80. Kellogg says that "_____" are the choicest of all substances capable of sustaining life, and their nutritive value far exceeds other substances. They are hermetically sealed and packaged to insure freshness, and are rich in minerals, iron, lime, and proteins.
- A. Avocados B. Nuts C. Vegetables D. Bananas

81. _____ are rich in lime and iron. One pound of _____ contains as much calcium as twenty-five pounds of beef, or eleven pounds of bread and potatoes. _____ are twice as rich in blood-building elements as meat, and are very rich in bone-building elements, in which meat is sadly lacking.
- A. Almonds B. Avocados C. Bananas D. Chestnuts
82. _____ are rich in starches such as grains. Many people use them to make bread. They are superior to cereal flour as a food, and are composed of 6% water, 10% protein, 8% fat, 70% carbohydrates, 3% cellulose and 2.4% minerals.
- A. Legumes B. Chestnuts C. Seeds D. None of the above
83. The ability to digest nuts may be _____ in one not accustomed to eating them. Daily use of nuts _____ one's ability to digest them with ease.
- A. Stimulating, decreases B. Moderate, increases
C. Painful, increases D. Low, increases
84. In vegetables, _____ contain an excess of acids, while the leaves contain an excess of bases. Leaves are richly supplied with sodium and calcium, whereas all seeds are deficient in these bases.
- A. Stalks B. Seeds C. Roots D. Stems
85. _____ will not reduce blood pressure, and is not an intestinal antiseptic and _____ will not cure gallstones. None of the curative powers attributed to these foods are real.
- A. Pepper, onions B. Onions, pepper
C. Cayenne pepper, Garlic D. Garlic, onions
86. The starches in cereals require more _____ and _____ to digest than do fruits. Cereals are the worst and most difficult to digest.
- A. Time, energy B. Water, cooking
C. Water, sprouting D. None of the above

87. The Defensive Diet League, during experiments, proved that bread taken alone breaks down one's health, and the combination of bread and meat resulted in _____ blood pressure and _____ disease.
- A. Low, ulcerative B. High, bone
C. High, brights D. High, muscle
88. _____ deficiency is a common fault of a cereal diet fed to animals. Farmers know this, and that is why they supplement their diet with greens.
- A. Protein B. Mineral C. Vitamin D. Starch
89. Some vegetarians are great cereal eaters [cerealists]. They would do less harm to themselves if they ate a moderate amount of _____.
- A. Meat B. Sprouted grains C. Vegetables D. Fruit
90. There are vegetarians who would be more properly called _____, as they drop their flesh diet. They are told that whole wheat and grains are almost perfect foods that "have all the elements the body needs in about the right proportion." These people not only consume too much cereal for which they suffer, but they eat their cereal in forms that tend to ferment before they digest. Wheat, their "perfect foods," are the most acid-forming grains, of all grains and leech large amounts of calcium from the body.
- A. Lacto-ova vegetarian B. Vegans
C. Ova-Vegetarians D. Cerealists
91. Pavlov showed that egg white, unlike other proteins, does not stimulate the flow of gastric juice. Abderhalden discovered that pepsin, a protein enzyme needed to act on proteins, does not act readily upon egg white. Okada showed that pancreatic juice and bile are both indifferent to egg white. Very little bile is poured out, and trypsin has no affect whatever upon raw egg white. Vernon, Hetin, and others have shown that raw egg white hinders the digestion of other substances. Bayliss, professor of physiology, University of London, says that raw egg white contains some substance, which in small amounts hinders the action of the digestive fluids. Lemoine, a

French authority, after careful study, says raw egg white contains a _____ which damages the kidneys.

A. Honey B. Protein C. Fruit D. Poison

92. Persons with gastric or intestinal ulcers, catarrhal conditions, nervous and food-sensitive people should completely avoid _____.

A. Honey B. Protein C. Toxins D. Fats

93. No _____ in a state of nature ever receives milk after it is weaned.

A. Adult male B. Adult female C. Mammal D. All of the above

94. An Indian child is usually weaned off its mother's milk at the age of _____ years.

A. Five B. Four C. Three D. Six

95. Meat food, sufficient to support 40% of the human population, is the return we get for the loss of vegetable food supply sufficient for _____ times the human population.

A. Four B. Five C. Six D. Seven

96. Fresh rain water and _____ water are best. This water does not _____ minerals out of the human organism.

A. Soft, ad B. Distilled, ad
C. Distilled, leech D. Soft, leech

97. Dr. A.A. Osman claims that children treated for ketosis with cod liver oil _____ the symptoms instead of relieving them.

A. Increases B. Decreases C. Delays D. Cures

98. It is seldom that animals slaughtered for food are free of _____ and the eating of _____ meat is not a healthful practice.
- A. Disease, diseased B. Will, diseased
C. All of the above D. None of the above
99. Those who cultivate drinking large quantities of _____ will feel a "need" for much _____; eating salt, spices, condiments, greasy foods, concentrated foods, meats, eggs, cheese, sugar, starches, etc., creates an irritation that must be diluted, suspended and washed away by the body's _____ reserves; one's thirst can never be satisfied with these poisonous foods; _____ while eating or digesting foods two, three, or five hours later, dilutes the digestive juices and suspends digestion, or makes it imperfect, and fermentation and putrefaction are sure to follow. _____ holds waste and toxins in solution and serves as a medium for the transportation of these from the body.
- A. Fruit juices B. Vegetable juices
C. Water D. None of the above
100. All natural _____ is more or less impure. Hard _____ is full of dissolved and suspended mineral matters. Surface _____ is full of earthy and organic matters. Even fresh rain _____ contains gases and dust picked up in falling. Distillation provides us the purest _____ obtainable. Drugged _____ from the city and wells is polluted with chemicals such as chlorine, fluorine, iodine, lime, aluminum, etc. Steam from radiators whose _____ contains chlorine give off poisonous gases that are inhaled, causing illness and disease. The same can be said when boiling _____.
- A. Juice B. Evaporated water C. Condensed water D. Water

ADVANCED NUTRITION I

BND-107

FINAL EXAMINATION: SECTION 2

STUDENT ANSWER SHEET

- | | | | | | | | | | |
|-----|---|---|---|---|-----|---|---|---|---|
| 1. | A | B | C | D | 16. | A | B | C | D |
| 2. | A | B | C | D | 17. | A | B | C | D |
| 3. | A | B | C | D | 18. | A | B | C | D |
| 4. | A | B | C | D | 19. | A | B | C | D |
| 5. | A | B | C | D | 20. | A | B | C | D |
| 6. | A | B | C | D | 21. | A | B | C | D |
| 7. | A | B | C | D | 22. | A | B | C | D |
| 8. | A | B | C | D | 23. | A | B | C | D |
| 9. | A | B | C | D | 24. | A | B | C | D |
| 10. | A | B | C | D | 25. | A | B | C | D |
| 11. | A | B | C | D | 26. | A | B | C | D |
| 12. | A | B | C | D | 27. | A | B | C | D |
| 13. | A | B | C | D | 28. | A | B | C | D |
| 14. | A | B | C | D | 29. | A | B | C | D |
| 15. | A | B | C | D | 30. | A | B | C | D |

- | | | | | | | | | | | |
|-----|---|---|---|---|-----|---|---|---|---|---|
| 31. | A | B | C | D | 52. | A | B | C | D | |
| 32. | A | B | C | D | 53. | A | B | C | D | |
| 33. | A | B | C | D | 54. | A | B | C | D | |
| 34. | A | B | C | D | 55. | A | B | C | D | |
| 35. | A | B | C | D | 56. | A | B | C | D | |
| 36. | A | B | C | D | 57. | A | B | C | D | |
| 37. | A | B | C | D | 58. | A | B | C | D | |
| 38. | A | B | C | D | 59. | A | B | C | D | |
| 39. | A | B | C | D | 60. | A | B | C | D | |
| 40. | A | B | C | D | 61. | A | B | C | D | |
| 41. | A | B | C | D | 62. | A | B | C | D | |
| 42. | A | B | C | D | 63. | A | B | C | D | |
| 43. | A | B | C | D | 64. | A | B | C | D | |
| 44. | A | B | C | D | 65. | A | B | C | D | |
| 45. | A | B | C | D | 66. | A | B | C | D | |
| 46. | A | B | C | D | 67. | A | B | C | D | E |
| 47. | A | B | C | D | 68. | A | B | C | D | |
| 48. | A | B | C | D | 69. | A | B | C | D | |
| 49. | A | B | C | D | 70. | A | B | C | D | |
| 50. | A | B | C | D | 71. | A | B | C | D | |
| 51. | A | B | C | D | 72. | A | B | C | D | |