

UNIVERSITY OF NATURAL HEALTH™

NATURE OF HUMAN PHYSIOLOGY

BND-106

FINAL EXAMINATION

TEXT: *Health For The Millions* by Herbert M. Shelton

The Final Examination will be composed of True or False, Multiple Choice, Fill in the Blanks, Questions and Answers, and a Matching Section. The Answer Sheets on which to write your answers to the Final Examination can be found at the back of each Section of your Final Examination. If you do not have enough space for your answers, please type them onto separate paper, and attach these typed pages to your Answer Sheets. Please **photocopy** your **Test Answer Sheets only**, and send the originals back to the school for grading. Please allow four to six weeks for grading. You may now proceed with your Final Examination.

NATURE OF HUMAN PHYSIOLOGY

BND-106

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. Animals cannot appropriate the raw materials of the soil and air, except for oxygen and water. These elements must be refined and synthesized by the plant and transformed into substances that the animal can appropriate. Plants, like factories, feed us and clothe us; they spin out our cotton in their looms and turn out their fruits and juices in profusion.
2. Crescent-shaped ridges or elevations of the lining of the small intestine, like small dams, delay the onward flow of the digested food and increase the absorptive surface. Additionally, these little ridges of mucous membrane are covered with very small velvet-like projections called "villi," which are specially adapted for absorption. The villi become fewer in numbers as the end of the small intestine is approached, until there are none at its end.
3. Laxatives occasion irritation in the digestive tract, giving rise to violent bowel action. Their effect weakens intestines and damages the intestinal lining, leading to ulceration and cancer of the colon.
4. Skin foods are frauds. Blood is the only skin food.
5. The heart is one of many viscera (organs) connected in a living chain. The connecting links in this chain are the arteries, capillaries and veins. The arteries carry the blood from the heart to every part of the body; the blood returns to the heart by way of the veins.
6. The heart is the prime mover of the blood. It is the immediate administration of the supply of nutritive materials to the body.

7. The heart is the “pulse of our passions,” “the emotional gate keeper of health or death,” and the connection between mind and emotions. The heart receives the wave and shock of passions, and responds to them with more or less blood to that part of the body needing it.
8. The “hygiene” factor must be adapted to the needs and capacities of the sick organism in the same way as other factors of hygiene.
9. Assimilation takes place in the brain first.
10. Enzymes are sensitive to a wide variety of chemical substances and are destructible by them. Great numbers of drugs are destructive of enzymes.
11. All secretions, including digestive and endocrine, are manufactured from materials supplied by the blood. This means that they are all made from food.
12. Waste excreted by the colon as urine is finally expelled by the act of voiding; waste excreted by the liver in the form of bile, is stored in the gall bladder for a time then voided into the small intestine. From there it is sent into the colon and finally voided with the stools. Carbon dioxide is excreted into the air cells of the lungs, where it is voided in the act of exhaling. Waste excreted into the colon is voided within the stools. Drainage is this total process, from the excretion of waste by the cell to its alteration by the liver and lymph glands to its transport to the organs of excretion, to its elimination by the liver, kidneys, colon and lungs, and to its ultimate voiding.
13. The process of the drainage of waste from cells and tissues from the body must be as intermittent as the process of nutrition by which the used up cellular substance is replaced. Any failure of drainage, no matter how caused, represents the beginning of disease.
14. Viewing the organism as an individual, the nervous system is of equal importance with the nutritive and excretory system. Indeed, as it is the control-system without which these other systems do not work at all, it is paramount.

15. Could we, by some magic process, melt away the flesh, blood, and bones of your best friend, leaving his nervous system intact, that so complete would be the nervous replica of him that you would be able to recognize him? The nervous system is the master control-system of the body.
16. The cerebellum, situated below the rear portion of the cerebrum, is concerned with balance, harmony, and co-ordination of movements. The cerebellum is also referred to as the "silent area" of the brain.
17. The importance of sensory as well as motor end-organs becomes apparent when we consider that, with the eyes gone, we would have visual nerves and centers that could not see; with the ears gone, we would have auditory nerves and centers that could not hear; with the nose gone, we would have olfactory nerves and centers that could not smell, etc. In the absence of their end—organs, as the instruments of action, nerves would be powerless, as the organs would be without nerves.
18. The autonomic or visceral efferent nervous system is organic or vegetative. It controls organs and functions within the body; the stomach, liver, heart and kidneys. Organs not under conscious control, under ordinary conditions of good health, possess no feeling in the common definition of this term. These well up from within a general feeling of well-being balance and harmony. When we become aware of our internal organs, we are sick.
19. The spinal cord is a continuation of the brain. The nerve centers of the spinal axis control the relations of the animal to the external world. They reside over acts of ingestion, egestion, exclusion and retention, control inlets of the upper part of the body and outlets at its lower portion. Some of these functions are partly under the control of the will; others are not. This "spinal brain" controls routine, unconscious and semi-conscious processes. It is quasi-sentient. A quasi-sensation is communicated to the spinal center through the nerves. This center sends an impulse out over a motor nerve.
20. The nervous system exercises quasi-mind over every part of the organism; it is everywhere capable of representing the state of the body and has a "will" capable of setting the organism into movement.

By it alone can we account for the unity and coherence of the system, because every part of it commands instant action as needed.

21. The nervous system may withdraw blood from the tissues in one part of the body and concentrate it elsewhere as life demands, producing a local anemia or hyperemia, even severe inflammation.
22. The visceral nervous system, an autonomous and unconscious system, controls the external organs. Though it is not directly controlled by the brain, the two nervous systems are connected and work together in perfect harmony. Any serious disturbance of either division affects the other. Thus it is that sight and sound, feeling and taste, smell and mentally aroused emotions affect for weal and woe the functions of the lungs, heart, stomach, intestines, liver, kidneys, and the various glands of the body. Grief, as an example, deprives one of a desire for food and suspends the secretion of digestive juices. It also suspends the muscular actions of the stomach. Joy and happiness accelerate all functions of life.
23. The organic unities that result from the specializing and organizing process become the head, eyes, heart, lungs, liver, legs and hands. Although each of them is capable of its own special kind of action, and many of them are capable of many varied actions, they remain subject to the single and integrating power that evolved the organism.
24. The brain is an instrument for performance of special functions and there are necessary connections and mutual dependencies between them and the substances of nature upon which we depend. Each organ is correlated with the materials of its function—the lungs with air, the stomach with food, the skin with the surrounding world, and the heart with blood.
25. The normal state of man, as in plants and animals, is one of uninterrupted health. True happiness depends upon the health of the whole man.
26. Habit will soon render the most rigid rules not only easy but agreeable. The strong by bad habits grow weaker, we know; by good ones, the weak grow stronger.

27. So long as we continue to believe that good health may be purchased as a commodity by one person from another, we shall continue to patronize those who sell health. This belief is a barrier to rational thinking. When once we have learned to realize that health must be earned by compliance with nature's simple conditions, we will seek to understand these conditions; we will cease running after every charlatan who comes peddling his wares, whether a scientific medical man with many degrees, or an ignoramus with more "nerve" than intelligence.
28. Genuine health is an active, vigorous state of the body, in which all the structures are sound and unimpaired, all functions efficient, and in which, by reason of its own vigor and energy, can wade through all the common emergencies of life with flags flying and banners streaming. Germs? Viruses? The healthy body laughs at them. Vaccines and serums? It has no need for these abominations.
29. In barren soil a plant is sickly; deprived of water, it wither and dies; denied air, it suffocates; in darkness, it has neither color nor strength. Deprive it of the conditions of health and disease and death result. This is also true of man and animals. The development of every organism rests upon certain requirements from which no organism is exempt. If these requirements are met, its growth, development, and vigor are assured. If not, it suffers. If the deficiency is great enough, death results.
30. Man's normal needs are few and simple for good natural health: "A good constitution, simple, unrefined food, pure air, pure water, cleanliness, exercise, rest and sleep, proper clothing and housing, freedom from care, wholesome pursuits and recreations, and happy domestic relations do not rest upon savagery."
31. Organic salts result from the synthetic processes of plants and animals. Inorganic salts are those such as sodium chloride, Epsom salts, sea salt, and sodium carbonate that are not the result of life's synthetic processes.
32. Food classifications are somewhat arbitrary, as nature produces no pure fats or pure sugars. Every food that grows contains proteins, carbohydrates, minerals and vitamins. Dates, bananas, and potatoes contain a higher percentage of protein than mother's milk. The

proteins of green leaves such as lettuce and celery are of especially high biological value. The key here is "biological value."

33. Not only is each specie of animal life particularly adapted to certain kinds of food, but they find certain kinds noxious or poisonous, so that what is wholesome to some species may be deadly to others. Tobacco leaves, for instance, may be nutritious to certain insects but are a rank poison to may or the belladonna plant, on which rabbits thrive in the wild, and would kill humans if much was eaten of this particular plant.
34. Man's constitutional character adapted towards a vegetarian fare is well attested. Man is not armed for prey and rapine; he lacks the jagged, pointed teeth and the crooked, sharp claws to rend and tear his victims. He is equipped with gentle hands to gather fruits and vegetables. His teeth are shaped to chew and eat them. Living in a state of nature, in a congenial climate, in a confined society, and where the earth required little cultivation, it seems certain that early man subsisted upon a diet of flesh.
35. Flesh eating animals must devour their whole prey, blood, bones, flesh, and guts to secure all the vitamins, minerals, and nutrients required to sustain their life. Otherwise death would result from a lack of nutrients available only in this complete eating process. Example: eating their prey's bones insures the calcium intake required to keep their bones and activities strong and healthy.
36. Onions, garlic, leeks, mustard oils, and salt are highly nutritious and non-irritating substances for human consumption.
37. Dr. Shelton says: "Olive oil is certainly a more wholesome article than butter, whether as a seasoning or as food." We could extend these remarks to cover the oils of the avocado, corn, sunflower seed, soybean, peanut, and a number of other oily plants including walnut oil. We should also be aware that cooking these same oils deteriorates all of them as well as animal fats.
38. To be continually eating substances such as coffee, tea, spices, condiments, and vinegar is stimulating and irritating, and is altogether against the physiological laws of health and will surely lead to impairment of orgasmic health.

39. Salt inhibits the digestion of foods, injures the capillaries and kidneys, and is excreted with great difficulty. It distracts from and camouflages the flavors of natural food and the senses to digest the foods eaten.
40. The excitement of alcohol is mistaken for evidence of oxygenation; it is simply stimulation and is always followed by depression. It interferes with digestion and drains the energies of nerves and life.
41. Grinding, grating, blending, chopping, and extracting juice are methods hygienists do not object to.
42. When we cannot relish plain fare, we should abstain from food.
43. The painful gnawing and craving which so many people experience when they miss a meal is the result of precious wrong feeding, and is not hunger.
44. Every passion we either cherish or don't are with us at every meal. Distressing anxieties derange the stomach, so when in this state, don't eat.
45. Eat only after physical comfort and emotional poise have been restored. Food should not be eaten immediately after hard, physical labor.
46. Sir Isaac Newton said that he could think only after four or five hours had elapsed subsequent to eating a meal.
47. Dr. Shelton said: "Chew your food, for your stomach has no teeth."
48. Indigestion is a process of bacterial decomposition of foods. It breaks them down into carbonic acid, alcohol, acetic acid, and a variety of toxic products of protein putrefaction. When these substances enter the blood stream they poison the body's tissues. It seems that indigestion may not be a contributing factor in disease.
49. In the last century, a "noted physician" in Rome noticed that in Italy an unusually large proportion of sick people recovered during lent. This was a consequence of the decreased food intake of the period, imposed upon them religiously.

50. By combining oxygen with sugar (oxidation or burning), the body provides for the production of heat. Oxygen in the blood combines with sugar in the uncontrolled and indiscriminate manner which the fuel theory of human energy demands. It is united with sugar in the cells, apparently by enzymic action. Even the enzymic action is rigidly controlled. When greater activity of a muscle is required, more blood is sent to it, more oxidation occurs and the temperature of the muscles rises. This increased temperature is essential to the greater action of the muscle fibers—hence, the wisdom of “warming up” before strenuous activity.
51. Only a very small quantity of water in take is necessary, provided our dietetic and other voluntary habits are physiologically correct. The vast quantity usually taken into the stomach is due to the inflammatory state of the system, produced by concentrated food, flesh, salts, spices, etc. The character of food determines to a large extent how much water is required. Drinking six glasses or more a day of water is physiologically unsound and leads to kidney and other diseases and physical impairments.
52. Milk is not a drink, but a food. Vegetable and fruit juices are also foods and not drinks. Soups, coffee, and beverages are all foods and not drinks, but poisons.
53. Acceleration of activity increases with the rise in body temperature until the temperature reaches a certain variable optimum, after which any added increase in temperature reduces activity. The rate of activity in some lower forms of life may become as great as the temperature rises, for they simply “live too slowly.”
54. When the temperature of our surroundings is out of all proportions to the needs of the body and to its capacity to adjust itself, the body must and does suffer. Seeking relief from extreme heat or cold causes expenditure of energy in resisting extreme temperature.
55. A due distribution of nutriment to all parts of the body depends upon the exercise of all its parts; hence, vigor is improved and maintained by physical activities that exercise all parts of the body. Exercise is the grand prerequisite to the promotion of blood through capillaries. When parts are inactive their capillaries are in a state of collapse and

little or no blood flows through them. Activity is essential to the distribution of blood; circulation of blood depends for its highest efficiency on physical activity. Indeed, the joint action of all parts of the body is requisite to the best circulation, hence to the best nourishment of all its parts.

56. The effects of exercise are not limited to the organs of motion, but extend to the entire organism. Man is not constituted for a life of robust activity. All his functions are arranged to fit him for activity. They never function so successfully as when the individual takes regular exercise. Muscular exercise calls into activity almost all of the body functions. Hence, they are all provided with exercise. There is increased heart action with increased circulation, increased respiration with increased action of the respiratory apparatus, increased skin action increased nervous activity and acceleration of function generally. The blood and lymph go racing through the tissues like a torrent carrying nutriment to them and sweeping away debris accumulated in the liver and elsewhere.
57. Rest is a state of the living organism where the voluntary, physical, mental, and sensory powers fall; into inactivity. Inactivity differs from rest in that the mind and senses are also inactive. But it is no passive state. During this process certain vital processes are most active and most efficient. It is during this period that the processes of replenishment, recuperation, and repair (anabolism) are carried out with their greatest efficiency and intensity. These activities are as important as those that go on during periods of the most vigorous activity.
58. There are degrees of sleep. In its lighter states, mental activity goes on. Dreaming is certainly a form of mental activity; but is it possible that dreaming goes on in the profoundest states of sleep? In dreams the images may be simple and congruous, but at times they are more absurd, incongruous and impossible successions of phantasmagoria than the wildest imagination could conjure up during wakefulness. It seems that we never reason in our dreams.
59. Relaxation is restful and conservative. Tension is wasteful and exhausting. Rest is one of the most important means of promoting and prolonging life.

60. The only similarity between a coma induced by barbiturate poisoning and sleep is the unconsciousness that exists in both cases. The two states are exact opposites. Sleep is a normal physiological state during which repair and recuperation of powers are at their maximum, while coma is an abnormal, pathological condition, during which the organism struggles with life and death from the poison ingested. Sleep replenishes, renews and reinvigorates; a barbiturate—coma enfeebles, depresses, and exhausts the functions of life. We awaken from sleep prepared for activity; we emerge from a barbiturate coma in a languid, energy-less state with a dull, frontal headache.
61. Plain, soft, warm water is all that is required to cleanse the body under all ordinary circumstances of life. Soap, even the mildest, robs the skin of its oil and diminishes the health and elasticity of the skin. It does not remove the dirt from the skin in any essential sense.
62. The mind is the measure of man.
63. The body is a set of sensories constantly palpating the mind by assuring forms which answer to the mental states. It feels the ghosts of thought and passion, not by trying to grasp them, but by making itself like them. Thus, it experiences the material by presenting it in a correspondent form.
64. The brain, as part of the body, is subject to the same laws as other organs of the body. Health of the brain and nervous system is frequently impaired by inadequate or deficient nutrition. If the brain is doomed to inactivity, its functions languish and its health decays. If due mental exercise is alternated with regular intervals of repose, the functions of the brain acquire readiness and strength.
65. Man's passions express themselves in the whole organism. They are the fires of life that burn with a luster that pleases and delights, or with an intensity that destroys. With the heat they receive from heaven or summon from the abyss, they shoot with great power through limb and brain. No new artifices will enable the scalpel to catch sight of these wonderful passions. The professors of death will never be startled to see the children of life walking among the sciences.

66. Amphibian character is never much above the level of human, bodily impulses; human mentality is never exempt from corruption. That form of moral headlessness which makes belly and flesh the only essentials of life, and the gratification of appetite and desire the only aim of life, cuts off and throws away the higher parts of man. That which is first and easiest lost is the brilliant "jewel" of the human mind. If we live by the belly and dispense with the mind, ours is the limited existence of the worm.
67. The practice of medicine is a poisoning practice from cradle to grave.
68. "Mind without body is like mirth without laughter," says Dr. Shelton.
69. Because the brain is a physical and integral part of the body, partaking of the general infirmities and suffering from the general toxemia, all persons who have impaired their health have at the same time and by the same means impaired their minds. How full of all "spiritual uncleanness," one with a vile, foul, diseased body can become; how discontented, unhappy and wretched can sickness make it! Health of the body is essential to health of the mind for the simple reason that the brain, the organ of the mind, is a physical organ and is an integral part of the organism.
70. The sex glands serve as more than merely reproductive function. The vitality and vigor of the individual depend, to a large extent, upon the healthy function of these glands. Excessive exercise of the sexual function drains the body of its energies and becomes detrimental to health and life.
71. Persistent stimulation of nerve energy increases the ability to live.
72. If the enervating influence is physical such as excessive cold, heat, dryness, or prolonged moisture—clothing, warmth, housing, fans and air conditioning may protect against these and prevent enervation.
73. Unmanifested self-discipline fails the organism that demands it.
74. If the enervating influences are psychological such as excessive fear, worry, jealousy, grouchiness, anger, excessive grief or an excessive constant outpouring of emotions, they must be controlled by

intelligence and reason, or they will wear out the organism and bring on premature aging and death.

75. A healthy mind is nourished by the same blood, drained by the same lymphatic system and subject to the same laws of life as are the bones, muscles, and liver. The laws of development are operative in assuring good mental development within the brain.

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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
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74. T F
75. T F

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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. The living organism is a whole which determines the nature of its parts and is constantly maintaining itself by means of a reproductive process we call _____.

A. Metabolism B. Nutrition
C. Attrition D. Anabolism

2. The _____ and nervous system constitute the master control system of the body.

A. Brain B. Nerves C. Sympathetic D. Body

3. In the final analysis, the _____ is/are engaged in carrying on the process of nutrition with every part contributing to the whole and no part selfishly assimilating alone. Reciprocity and mutual service characterize the work of the bodily organs. The lungs take in oxygen for the whole body and not only for themselves. The stomach digests food for the entire organism and not merely for its own food needs; the heart receives and circulates the blood throughout the body, not merely through its own tissues. The living organism is a model of cooperation.

A. Separate body B. Whole body
C. Collective organs D. Blood and lymph

4. By the marvelous processes of _____ nutrition, lifeless matter drawn from air, water, and soil has been raised to the status of a living structure.

A. Cellular B. Organic C. Plant D. Good

5. Food is received by the lips, the incisor teeth and the tongue is delicately treated and minced. Behind the incisors are the molars that grind it to bits. As this work proceeds, the tongue moves the food about and thoroughly mixes it with _____. The importance of this _____ step for digestion may be surmised by the number and complexity of the structures and functions involved within it.

A. Juices, 1st B. Saliva, 2nd C. Saliva, 1st D. Enzymes, 1st

6. Through the center of each villi passes one or more fine, white vessels, the lacteals, so-called because of the milk-like appearance of their contents. The principal function of the lacteals seems to be the _____ of _____. The lacteals are part of the lymphatic system.

A. Absorption, fat B. Process, digestion
C. Anabolism, cells D. Catabolism, cells

7. Pain, sluggishness, straining, and blood in the stool are evidences that something is wrong. The condition known as _____ has well been termed "our first national disease." It seems to become more prevalent as man departs more and more from his natural way of life.

A. Stimulation B. Constipation
C. Irritation D. Colitis

8. More important to good bowel action than bulk is normal nerve capacity. The person with normal nerve capacity and energy will have normal bowel action on a diet of bananas, for instance, which contain almost no bulk. The enervated individual may be constipated in spite of excessive bulk. It is more important in cases of _____ to restore _____ energy than to add bulk on top of the diet.
- A. Colitis, normal, nerve
B. Indigestion, normal, nerve
C. Indigestion, healthy, nerve
D. Constipation, normal, nerve
9. _____ is the end of digestion and absorption.
- A. Death B. Impaired health C. Heath D. Life
10. In sort, the body grows from _____ by virtue of its unique organizing processes. _____ is a mobile tissue. It is a repairing and protecting agent; it is a vehicle for the substances necessary for the reconstruction of tissue or those required to protect against injury.
- A. Blood B. Tissue C. Cells D. Evolution
11. _____ and _____ issuing from the heart so permeate the regions, organs, and tissues that when they are injected with wax, the shape of the body is filled.
- A. Tissue and capillaries B. Muscles and veins
C. Blood and lymph D. Arteries and veins

12. The change of the blood from venous to arterial takes place in the _____, as the blood gives up its load of carbon-dioxide and takes on a fresh supply of oxygen. From here the crimson stream charges back to the heart. When the oxygenated blood reaches the heart it is driven to all parts of the body by contraction of the left ventricle.
- A. Lungs B. Heart C. Lymph D. Veins
13. The _____ tube prepares from all things one universal dish, the blood of life. This is to go to the organs of the body. It is the viand of viands, varying hour to hour and suited with more than mathematical precision to the constitution and appetite of the consumer. It serves up the daily nectar and ambrosia of the body. But the process of digestion terminates at the point where the food is taken into the lacteals to become a part of the blood.
- A. Digestive B. Esophagus C. Food D. Stomach
14. The work of digestion in the cell is accomplished by _____. The intracellular (within the cell) _____ so far isolated are ribonuclease, deoxyribonuclease, phosphatases, cathepsins, glycosidases and sulfatases.
- A. Enzymes, enzymes B. Enzymes, identified
C. Tissue, enzymes D. None of the above
15. _____ secreted by the endocrine glands are practically all synthetic in their functions. Insulin, involved in the oxidation of sugar, may be regarded as analytic. _____ and vitamins are also subject to destruction by drugs.
- A. Secretions, mineral B. Hormones, hormones
C. Hormones, minerals D. Hormones, secretions

16. Nutrition incorporates food materials into the flesh, blood, and bone of the individual. It is at this stage of the process that the _____, (which are enzymic in character), secreted by the endocrine (ductless) glands, are brought to bear upon the nutritive processes.
- A. Fluids B. Oxidases
C. Hormones D. Rinonucleicoidases
17. When a piece of human tissue is cultured in a flask, two thousand times its own volume in liquid is required to prevent it from being poisoned by its own waste called metabolin. Just as the gradual accumulation of alcohol in a mass of fermenting material reaches a state of concentration fatal to the bacteria that produce alcohol, so the accumulation of normal cellular waste in liquid medium eventually reaches a fatal concentration. This is a true _____.
- A. Tragedy B. Travesty
C. Injustice D. Self-poisoning
18. Removal of _____ is essential to the continuance of life. It is by this overall process of _____ that the fluids and tissues in the body are kept sweet and clean. The lymphatic system, circulatory system, liver, colon, urinary system and respiratory system are all essential to the complete removal of _____ from the body.
- A. Toxemia, policing, toxemia
B. Waste, extracting, toxicosis
C. Waste, drainage, waste
D. Waste, drainage, toxemia

19. The _____ integrity and _____ efficiency of the nervous system depends on functional efficiency of all organs of the body. This dependence is reciprocal for the nervous system, which relies on the other organs for its own sustenance and for drainage of its waste.
- A. Structural, functional B. Functional, structural
C. Complete, functional D. None of the above
20. Although the nervous system is a unit immersed in a well of flesh, it is isolated from the rest of the body. The central and peripheral nervous system on the one hand and the body on the other, are subject to the necessities of each other. If the body gives the brain substance, the brain gives _____ to the body.
- A. Brains B. Health C. Substance D. Heart
21. The _____, or bulb, contains important nerve centers which control heart action, breathing, and circulation.
- A. Obligatoria B. Medulla C. Limbic D. Cerebellum
22. The _____, cranial, and spinal nerves relate us to the external world, and control our voluntary movements and special senses. The visceral nervous system controls our inner functions and involuntary life; it controls the stomach, liver, heart, and other internal organs.
- A. Sympathetic nervous system
B. Parasympathetic nervous system
C. Sympathetic system
D. Central nervous system

23. The _____ and muscles of respiration are organs by which we breathe, but nerves control their actions so that we breathe faster or slower deeper or more shallowly.

A. Heart B. Lungs C. Air cavity D. Veins

24. Without the _____ we have dynamos conveying electrical energy to distant parts by an intricate network of wires, but at the ends are no light bulbs, no heating units, no motors, no radio and television broadcasting on receiving apparatuses.

A. End-organs B. Mind
C. Instructions D. Nervous system

25. Thus we can see how full the body is of “_____,” of “_____,” of irresistible causes of harmony and cooperation in the bodily fabric. Where there is no nerve [this is to say, where the nerve is destroyed], there is no control, no action, no functions; the structure that has lost its innervations answers no call for cooperation and contributes nothing to support and stability of the organism.

A. Blood, guts B. Ears, eyes
C. Eyes, wills D. None of the above

26. The parts of the body move in synchronized steps with their function. The organs are set in motion in the service of the body, and the body is set in motion in the service of the organs. In this ____ and _____ are to be found one of the most important lessons of life; the necessity of caring for the body as a whole and not by piecemeal, as the specialist attempts. Fullness of life rests on the functional and structural integrity of the organism and not on one or two of its organs or systems. The maintenance of integrity, therefore, becomes the basic aim of living.
- A. Part and separateness B. Unity and interdependence
C. Part and interdependence D. None of the above
27. The skin should possess a _____, _____, _____ _____. It should not be dry and cracked. Soap and hot water rob the skin of its oils and applying creams to the skin does not remove the cause, as they have their own harmful effects on the body.
- A. Warm, moist, healthy surface
B. Fine, smooth, elastic surface
C. Warm, moist, impenetrable surface
D. None of the above
28. The human body may be said to be a number of bodies within _____; the nervous body, the circulatory body, the skin body, the glandular body, the muscular body, and the osseous body. All are closely united in one total function.
- A. A body B. An astral projection
C. Spiritual bodies D. Physiology
29. The neighborliness and togetherness of the organs of the body are often _____ rather than structural. Two neighboring

structures, as unlike as teeth and tongue, are _____ associated in the first steps of digestion.

- A. Symbiotic, always B. Symbiotic, functionally
- C. Functional, functionally D. Functional, always

30. _____ is the outstanding evidence of biological activity. When a man is taught how to live within his biological limitations and adequately, but not excessively, supply his biological requirements, then will advanced age become the only serious cause of death, for _____ will reign supreme.

- A. Life, life B. Health, health
- C. Health, life D. None of the above

31. Health and soundness should be predicted upon an inner lifelong direction of acts and _____, instead of as now, the chance results of outside influences over which the individual is likely to think that he has no control.

- A. Beliefs B. Faith C. Habits D. Chance

32. _____ of action is the true test of perfection of organic function. If one is conscious of the stomach, heart, bowels, or some other part of the body, there is something wrong.

- A. Man B. Awareness C. Woman D. Unconsciousness

33. A valid system of _____ cannot be artificial.

- A. Medicine B. Hygiene
- C. Herbs D. Holistic medicine

34. When man clothed himself, came together in towns, adopted new modes of eating and learned to use fire, he brought a wide variety of _____ upon himself.
- A. Comforts B. Choices C. Confusion D. Evils
35. Any way of life that fails to supply the organic needs of the human organism must lead to ultimate disease. If organic needs are not adequately supplied, organic _____ is inevitable.
- A. Deterioration B. Death
C. Impairment D. None of the above
36. The _____ elements such as proteins, carbohydrates, fats, salts, and vitamins that are distinct from _____ elements, alone are food for the animal organism.
- A. Chemical, food B. Food, chemical
C. Plant, chemical D. Food, plant
37. The man who eats a _____ diet of fruits, nuts, vegetables and other natural foods in their natural state will receive adequate vitamins. There are vitamins in everything that grows. If food are not cooked or refined, vitamin deficiency is practically impossible.
- A. Full B. Concentrated C. Vegetarian D. Varied

38. Man is subject to the law of specific adaptation. Some foods are far better fitted to his wants than others. Some plants are poisonous to him but because man's instincts have become so blunted and perverted and his senses of taste and smell so corrupted, he has lost the ability to determine whether a substance is _____ or _____. Because he has lost his way and become confused in a bewildering forest of dietetic substances, he must find his way back by establishing his normal dietetic character.
- A. True, false B. Healthful or unhealthful
C. Friend, foe D. Dangerous, poisoned
39. _____ have taught the world that dogs and cats, being "normally carnivorous," need flesh to support them in health and strength. Vegetarians, feeding dogs and cats on vegetable foods to the exclusion of flesh, have proved that _____ are in error. They found their vegetable-eating cats and dogs to be intelligent, better tempered, cleaner, healthier, longer lived, free from bad odor and less liable to the development of mange and to infestation with worms than those fed on flesh. (next page)
- A. Physicians, physicians B. Scientists, scientists
C. People, people D. None of the above
40. Dr. _____ stated: "Brandy, whiskey, wine, beer, vinegar, and sauerkraut are products of decay, on the same plane as barnyard manure or the contents of a cesspool.
- A. Herbert Shelton B. Russell Trall
C. Robert Johnson D. Robert Walter

41. Every meal should be a gustatory enjoyment, or, as an anthropologist who once spent a few weeks at the health spa, described the experience of eating our meals, a "_____." We should enjoy the taste of food; we should enjoy the sensation of food passing down the throat, and nothing in all the world should give as much keen delight to man's sense of taste as the flavors of natural food.
- A. Gustatory orgasm B. Gustatory experience
C. Gustatory delight D. Gustatory elation
42. _____ not only occasion undue expenditure of energy, but also prevents the evolvment of energy. They not only squander man's functional resources, but alienate those that would otherwise naturally re-energize him. They interfere directly with the nutritive processes through which alone the resources of life are converted into energy. They devitalize all vital tissues.
- A. Exercise B. The sun C. Work D. Stimulants
43. When fruits or vegetables are grated, blended, chopped fine, or juiced, so that the air gets to more of the inner structure, _____ is multiplied many fold and nutrients are lost.
- A. Fermentation B. Putrefaction
C. Deterioration D. Oxidation
44. _____ directed by habit and arising out of a morbid system are/is certainly not reliable guides to eating and drinking.
- A. Longings B. Eating C. Poisons D. Disease

50. The use of _____ and cathartics causes food to be sent through the digestive canal so rapidly that it is not digested. This does not allow adequate time for absorption, and permits much fermentable carbohydrate and putrescible protein to pass into the colon. Not only does it cause considerable irritation and discomfort, but it leads to malnutrition from failure to digest and absorb an adequate quantity of food.

A. Drugs B. Histamines C. Proteins D. Laxatives

51. Eating when _____ is a common cause of indigestion.

A. Not hungry B. On the run
C. Late D. Not sitting down

52. The distinguishing phenomena of the respiration process are the intake of _____ and the excretion of _____.

A. Carbon dioxide, metabolic waste
B. Oxygen, metabolic waste
C. Fluids, metabolic waste
D. Oxygen, carbon dioxide

53. Rain-water, _____ water from an uncontaminated spring (many springs do not provide _____ water), or distilled water are the only waters fit to drink.

A. Hard, hard B. Soft, soft
C. Mineral, mineral D. All of the above

54. Drinking too much or too little water are biologically _____.
A. Required B. Hurtful
C. Tolerated D. None of the above
55. In lands where frogs, frost, and darkness cramp the energies of man as well as in regions where excessive, continued heat depresses his and vital activities, life is _____.
A. Welcomed B. Not invited
C. Hard D. Handicapped
56. Fused by the fire of excessive action, man even becomes _____ to pain.
A. Insensible B. Repulsed C. Addicted D. Friendly
57. _____ and _____ are the logical restoratives when over-activity has resulted in exhaustion, impaired function and discomfort.
A. Food and nutrition B. Exercise and rest
C. Rest and exercise D. Rest and sleep
58. Nocturnal activities, whether physical, sexual, gustatory or alcoholic, prevent _____ and _____.
A. Digestion and Nutrition B. Rest and Restoration
C. Sleep and Nutrition D. None of the above

59. Stupor and coma induced by drugs may be designated as _____ sleep.
- A. Mock B. Real C. Half D. Total
60. Real cleanliness, the kind that is next to godliness and is both inside and outside the body, is free from _____.
- A. Disagreeable bacteria B. Disagreeable viruses
C. Disagreeable odor D. None of the above
61. All _____ operations are associated with the actions of the brain. Being thus inseparable, it becomes of primary importance to discover a means by which the healthy actions of the brain and _____ are regulated.
- A. Spiritual, mind B. Mind, mind
C. Physical, mind D. All of the above
62. Mental activity should be alternated with _____ exercise. Continued _____ activity with shallow breathing, perhaps breathing the confined air of the room, and the stimulants so commonly taken under such circumstances, probably work more to produce the state of apparent mental saturation than mental exercise. Health and vigor require alternate periods of activity and repose, and the denial of these is incompatible with a sound mind and body.
- A. Physical, physical B. Yoga, Reduced
C. Relaxing, relaxing D. All of the above

63. The foulness of the blood that results from the retention in the tissues of unexcreted waste, and to which we have given the name of _____, or Toxicosis, is the foundation for all the ills of mankind. This is as true of those diseases which we declare to be mental as of those that we declare to be physical.

A. Anabolism B. Toxemia C. Catabolism D. None of the above

64. Health of the _____ is essential to health of the _____, for the simple reason that the brain, the organ of the _____, is a physical organ and is an integral part of the organism.

A. Body, mind, mind B. Mind, body, mind
C. Mind, body, body D. None of the above

65. It is by remote interpretation that the trembling viscera, the main actors of life, respond to thoughts, emotions, and messages brought to the nerve centers from the periphery of the body. The intestinal parts are telegraphic of what is and what is not. These deeply-buried sensories respond with delight or trembling to communications from the _____ and senses. The face, too, mirrors the _____. Smiles precede laughs and clenched jaws, and go before clenched fists. The face seems to be the mainspring and clockwork of the active body.

A. Body, Mind B. Mind, Mind
C. Nerves, Mind D. None of the above

66. The _____ senses are the proper physical powers of man; they are the genii of action, the maids in the golden helms that attend us in the fields and bear us harmless through the hurtling showers.

A. Muscular B. Cardial C. Nervous D. Mind

67. Those that make a religious virtue of _____ and then act in opposition to their professions injure themselves by their hypocrisy. Those, who, for religious reasons, abstain from normal sexual intercourse and practice sexual perversion such as masturbation, homosexuality, bestiality, etc., are likely to become selfish and anti-social and to physically exhaust themselves.

A. Celibacy B. Homosexuality C. Sex D. None of the above

68. Enjoyment within _____ limitation, which is to be short of sufficient energy expenditure to inhibit elimination, is healthful and life building. But when excess is made habitual, nerve energy is lowered and the individual becomes enervated. Then it is that the waste products of metabolism are retained, producing toxemia or toxicosis. Add to toxemia, which is poisoning from gastro-intestinal putrefaction, plus insidious poisoning of nicotine, caffeine, alcohol and other drugs, plus the enervating effects of sexual excesses, and we have a state of weakness and poisoning from which any so-called disease may evolve.

A. Healthful B. Physical
C. Neural D. None of the above

69. The _____ way is an intelligent ordering of life with genuine needs without overstepping its limitations. It avoids excesses and deficiencies. A _____ way of life is one of ignorance and self-indulgence. It oversteps all of life's limitations and goes to extremes in all things.

A. Hygienic, unhygienic B. Unclean, clean
C. All of the above D. None of the above

70. There is an old adage that "birds of a feather _____ together." Habits tend to _____ with their kind. It is rare that we find an individual addicted to but one poisonous vice. The rule is that the addict has several addictions.
- A. Flock, flock B. Clump, clump
C. Hold, hold D. Collect, collect
71. The state of the _____ is the first indicator that something is wrong in the body. Even such a simple thing as indigestion may result in lowness of spirits, which may run from a slight dejection and ill-humor to the most extreme melancholy and ill-temper, and sometimes even a disposition to suicide.
- A. Body B. Nervous system
C. Mind D. Respiratory system
72. The _____ _____ in the tongue are nerve endings. When these come in contact within food, nerve impulses are sent inward to the brain. The brain, by a complex and somewhat circuitous process, sends impulses to the glands of the stomach. Here, juice of the kind demanded is poured out as needed. Both the timing and the character of the juice are modified by the _____ of food. It is important, therefore that food be well chewed and remain in the mouth long enough, to extract all the _____ from it. It is also important that the food is not camouflaged or smothered by condiments and other means that confuse the sense of _____.
- A. Mouth, lining, digestion, flavors, eating
B. Skin lining, digestion, flavors, eating
C. Taste buds, taste, taste, taste
D. Taste buds, taste, taste, eating

73. Let it be remembered that the stomach can digest food only as it is supplied with _____ and nerve impulses. A severe task cannot be put upon the stomach and brain or muscles simultaneously without impeding the process of digestion. Heavy muscular activity, without a succeeding period of repose, is unfavorable to digestion.

A. Power B. Blood C. Circulation D. Brain

74. _____ is essentially as much a part of man as is his body.

A. Intelligence B. The heart C. The brain D. All of the above

75. Mental power is brain power, and brain power is _____ power.

A. Physical B. Body C. Mental D. Nerve

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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 |

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FINAL EXAMINATION: SECTION 3

FILL IN THE BLANKS: Please fill in the blanks on your Answer Sheets **ONLY**, found on the last page of Section 3.

1. _____ is a master drama of nutrition and drainage under the control, in the higher animals, of the brain and nervous system.
2. _____ is the sum of all processes by which raw materials (foodstuffs) are transformed into living structure and prepared for use by the body. It is the process by which living organisms develop, grow repair and maintain themselves, where wounds and broken bones are healed, functions are carried on, and reproduction accomplished. It is the process of converting food into cell substance. This occurs in the living organism and nowhere else, and in the case of man, vegetable substances are transformed into human existence.
3. The process by which the digested food is transferred from the food tube to the bloodstream is known as _____.
4. _____ is material to be converted into blood; blood is material converted into flesh.
5. _____ is the sum of all processes by which waste is carried from the cells, prepared in the lymph nodes and nodules, and carried to the liver, lungs, and kidneys to be removed from the blood (eliminated) and, finally, expelled from the lungs, bladder and bowel (voided). In this process not only is the normal waste of life removed from the blood, lymph, and tissues, but foreign or adventitious

materials that may have been introduced into the body are also expelled.

6. _____ teaches the simple, rational doctrine that health is living within the law, while disease is outlawry. He who offers to cure without requiring a cessation of the outlawry (without removing cause), is *particeps criminis* with the outlawry. The fact that a law exists in nature provides us with the necessity of obeying it.
7. Thirst lives in the _____; hunger resides where _____ is happily blended with smell. So-called stomach hunger is a symptom of pathology and has no connection with genuine or physiological demand.
8. To the process of "tearing down" in metabolism, the term _____ is applied. To the process of "building up," the term _____ is applied.
9. A _____ dissociated from the body would be like mirth without laughter, love bereft of its delicious sighs, pride without its hardened chest and swollen throat, rage without its choking breath, anger without its tempest and clenching fists, joy and gladness without the healthy swelling of the bosom and eager song, thought without stillness, and contemplation without breathlessness."
10. Rest, sleep, food, sunshine, clean air, clean water and cleanliness, mental poise, exercise, and symbiotic relationships with life are all simple conditions required for natural _____.
11. Cooking is the application of high temperatures to food. It may be properly defined as the "_____ art of cooking," spoiling wholesome food substances.
12. From Francis J. _____, Jr.'s experiments with the different kinds of milk, described in *American Journal of Orthodontics* and

Oral Surgery (August 1946), we will derive an instructive lesson. Cats fed on uncooked milk bred normally and remained healthy from generation to generation; all cats fed on other forms of milk suffered from increasing degrees of sickness, degeneration and skeletal malformation in the following order: "pasteurized milk, evaporated milk and sweetened condensed milk. His later experiments showed that complete regeneration, in those animals in which degeneration was not critical, required four generations.

13. Bernard MacFadden used to admonish: " _____ your food, for your stomach has no teeth."
14. "Never drink with your _____.
15. It is possible to drink too much water, and it is possible to take too little. Both extremes are _____.

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FINAL EXAMINATION: SECTION 3

STUDENT ANSWER SHEET

- | | |
|-----------|-----------|
| 1. _____ | 12. _____ |
| 2. _____ | 13. _____ |
| 3. _____ | 14. _____ |
| 4. _____ | 15. _____ |
| 5. _____ | |
| 6. _____ | |
| 7. _____ | |
| 8. _____ | |
| 9. _____ | |
| 10. _____ | |
| 11. _____ | |

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FINAL EXAMINATION: SECTION 4

QUESTIONS & ANSWERS: Please answer all questions in complete sentence format. **TYPE** your prose answers on **SEPARATE** paper and **TITLE** all pages "FINAL EXAMINATION: SECTION 4." Please match your answer and question numbers in sequential order and then attach them to Section 4 before you send in your Final Examination.

1. (1) Show some of the means by which the body appropriates nutritive substances; (2) The process; (3) The results.
2. Explain the function of the digestive tract, or mercy tube, as it is called.
3. State the three characteristics of the cell theory that was formulated a little over hundred years ago by Schleiden and Schwann.
4. [A] Identify the substances in the blood that are not derived directly from the digestive tract. [B] what are some of their functions in the human organism?
5. The central nervous system consists of two major parts. Name them and their function.
6. [A] What is food? [B] Define the difference between organic and inorganic substances and their importance in relationship to the animal organism.

7. What are the common foods rejected by Hygienists?
8. Describe the relief and the effects of withdrawals from stimulants of peppers, spices, alcohols, tea, coffee, and cocoa on the human organism. What true relief is needed for true health?
9. What are the inadequacies of the modern diet and why are they inadequate?
10. [A] What are the benefits of sunlight as a requirement and condition of health? [B] What are some examples of unhealthy results when sunlight is denied in the animal organism?