

Section –A

Answer No 1: Objective type questions:

(i) What is Tissue?

A group of cells having the same origin, similar shape and specific or common generalized function is known as a tissue.

(ii) What is Posture?

“A set of muscle contractions that place the body in the necessary location from which a movement is performed.”

Or

“The situation or disposition of the several parts of the body with respect to each other for a particular purpose.”

(iii) What do you understand by Health?

Health is a state of complete physical, mental and social wellbeing and not merely an absence of disease or infirmity.- W.H.O.

OR

A condition or quality of the human organism expressing the adequate functioning of the organism in given conditions, genetic or environmental.

(iv) Name any two freely movable joints?

- Gliding joint- Joint between carpal and tarsal bones
- Hinge joint- Ankle, knee and elbow joints.
- Pivot joint- Upper ends of the forearm bones.
- Ball and Socket joint- Shoulder joints and hip joints.
- Condylloid joint- Wrist
- Saddle joint-joint between metacarpal bones of thumb .etc.

(v) Name two matters present in the brain.

Grey matter (outer) and White matter (inside)

(vi) List down any four essential properties of life.

- Presence of protoplasm
- Excitability and Irritability
- Conductivity
- Respiration
- Assimilation and digestion
- Metabolism
- Growth and Development
- Excretion and secretion
- Reproduction

(vii) Name the four parts of colon.

- Ascending colon
- Transverse colon

- Descending colon
- Pelvic colon

(viii) List down any four endocrine glands.

Hypothalamus, Pituitary, Thyroid, Pineal, Parathyroid, Adrenal, Islets of Langerhans, Testis, Ovary, etc.

(ix) What is oxygen debt?

Oxygen debt may be defined as the amount of oxygen consumed during the recovery phase of an endurance activity over and above resting requirements (vessels) is known as oxygen debt. It has two parts/ components – (i) Lactic part (ii) Alactic part

REST	EXERCISE	RECOVERY
(Man is fresh and Possess normal store of energy)	(Energy is used up)	(Compensation of energy)

(x) What is refuse disposal?

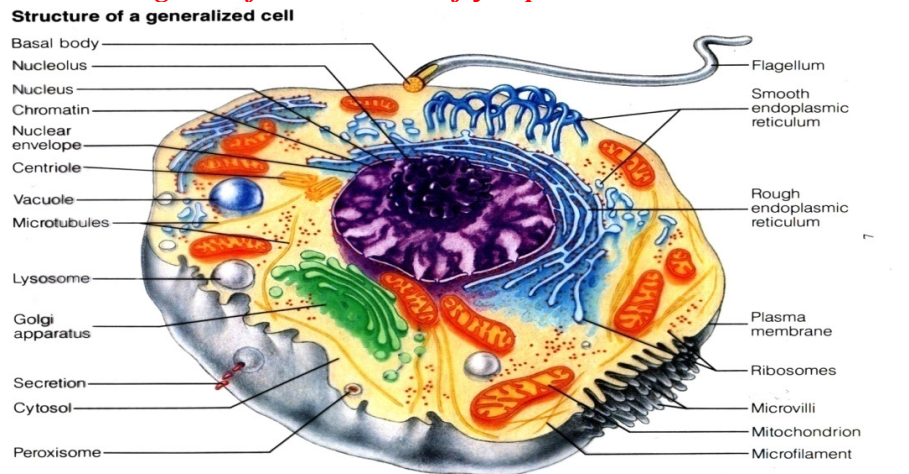
The term “Refuse” includes garbage (food wastes) rubbish (paper, plastics, wood, metal, throw-away containers, glass), demolition products (bricks, masonry, pipes), sewage treatment residue (sludge and solids from the coarse screening of domestic sewage), dead animals, manure and other discarded material. E.g. street refuse, market refuse, stable litter, industrial refuse, and domestic refuse etc.

Section-B

Note: Attempt one question from each unit; each question carry equal marks (5X8) 40 Marks

UNIT-I

- **Draw a labeled diagram of a cell and briefly explain tissue.**



Tissue:- A group of cells having the same origin, similar shape and specific or common generalized function is known as a tissue.

Four Basic Kinds of Tissues:-

- **Epithelial Tissue**

- **Connective Tissue**
- **Muscle Tissue**
- **Nervous Tissue**

Each tissue is explained briefly.

UNIT-I (Optional):

Answer 2 (Optional) *Explain the essential properties of life.*

- Answer (Optional):- Presence of protoplasm
- Excitability and Irritability
- Conductivity
- Respiration
- Assimilation and digestion
- Metabolism
- Growth and Development
- Excretion and secretion
- Reproduction

These points can be elaborated.

UNIT-II

Answer 3 (Optional) *Draw a labeled diagram of human digestive system and explain the functions of liver.*

Functions of Liver:-

- It manufactures bile that is stored and concentrated in the gall bladder.
- It regulates sugar level in the blood.
- It mobilizes glycogenesis and glycogenolysis process.
- It converts glucose into glucose and amino acids into fats and helps in the oxidation of fats to release energy.
- It causes deamination of amino acids and results in the production of ammonia. The ammonia combines with CO₂ in the liver and forms the urea and uric acid.
- It helps in the manufacture of coagulation factors in addition to fibrinogen and prothrombin.
- It forms the erythrocytes in the foetus (haemopoiesis) and causes its destruction in the

adult life of man.

- It manufactures all the plasma proteins.

UNIT-II (Optional):

Answer 3 (Optional) Write short notes on the followings:-

i. **Functions of Lungs:-** The lungs are a pair of organs in the chest that are primarily responsible for the exchange of oxygen and carbon dioxide between the air we breathe and the blood.

Functions of Lungs:-

- The lungs exchange oxygen and carbon dioxide between the air we breathe and the blood.
- The tracheobronchial tree is the passage way from the mouth to the interior of the lung.
- Gas exchange occurs in the alveoli deep in the lungs.
- Breathing air in (inhalation) requires muscular effort.
- Air is warmed, humidified, and cleaned by the nose and lungs. etc..

ii. Blood vessels-

ARTERIES :-

- Large hose-like vessels
- Carry blood away from the heart.
- Have thick, multi-layered muscular walls.
- Walls are capable of stretching to accommodate the “pulse” of blood when the heart beats.
- Capable of expanding and contracting to change and maintain the blood pressure.
- NO valves
- Blood spurts
- Blood inside them is high in oxygen & low in carbon dioxide except in pulmonary artery.
- Blood inside is bright red
- Blood inside is under High pressure
- Examples: Coronary (heart), Brachial (arms), Carotid (head), Femoral (legs), Renal (kidney).

VEINS:-

- Larger inside diameter compared to arteries
- Take blood towards the heart
- Thinner, less muscular walls than arteries, but still 3 layers
- No stretching or contracting of walls except by external muscles.
- Contain valves to help return the blood to the heart (compensate for lower venous

pressure, less muscle in walls, and large diameter).

Blood:

- Moves smoothly.
- Low in oxygen except pulmonary circulation.
- Dull red.
- Low pressure.
- Examples: cardiac (heart), brachial (arms), jugular (head), femoral (legs), renal (kidney).

UNIT-III

Answer 4. *List down the endocrine glands and briefly explain the functions of pituitary gland in detail.*

Answer No.4:- List of endocrine glands are as follows:-

- Hypothalamus ii. . Pituitary iii. Thyroid iv. Pineal v. Parathyroid vi. Adrenal vii. Islets of Langerhans viii. Testis and ix. Ovary etc.

Function of pituitary gland in detail:- Pituitary gland is small body (0.5 gm) about the size of a gram or cherry located on the ventral side of the brain. It hangs below the hypothalamus. Pituitary has two lobes:- (a) Anterior pituitary (75%) (b) Posterior Pituitary (25%)

The Anterior lobe of pituitary releases six hormones all protein in nature that control the activities of various other endocrine glands. They are given below:-

- Growth hormone or Somatotrophic hormone (GH or STH)
- Adrenocorticotrophic hormone (ACTH)
- Thyroid stimulating hormones (TSH) or Thyrotropin
- Follicle stimulating hormone (FSH)
- Luteinising hormone (LH) or Interstitial Cell Stimulating hormone (ICSH)
- Prolactin or Luteotropic hormone (LTH) / Mammotropin

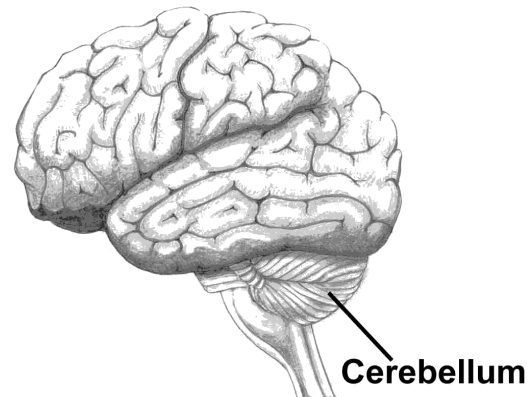
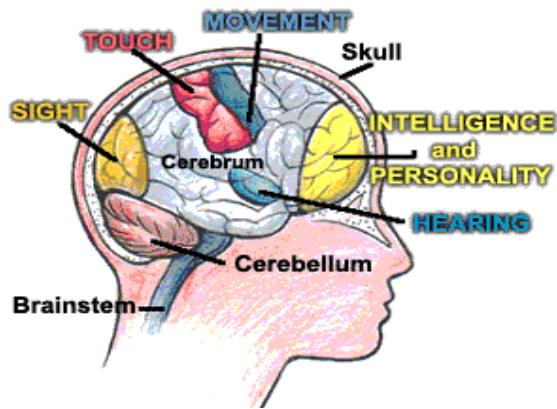
Posterior Lobe releases two peptide hormones:-

- Vassopressin or Antidiuretic hormone (ADH)
- Oxytocin or Pitocin

Note:- Functions of all these hormone will be explained .

Answer 4 (Optional) *Draw a labeled diagram of brain and explain the functions of nervous system.*

Answers No 04 (Optional):-



Functions of Nervous system:-

- It controls and regulates various activities of the organs and finally the organism as a whole. E.g. muscular contraction, sense of vision, pain, heart beat, respiratory rate etc, are regulated by nervous system.
- It coordinates the working of various glands and tissues of the body thus regulating internal environment of the body.
- It helps the organism to react to the external environmental fluctuations. etc.

UNIT-IV

Answer 5. Define Health Education. Elaborate the principles of health education.

Answer No.5:- Health education is a process that informs, motivates and helps people to adopt and maintain healthy practices and life styles, advocates environmental changes as needed to facilitate this goal and conducts professional training and research to the same end.

In simple words knowledge about health and hygiene is called health education.

Principles of health education:-

- Known to unknown
- Participation
- Learning by doing
- Reinforcement
- Comprehensive
- Interest

- Soil (People), Seed (Health facts) and Shower (Transmitting media)
- Motivation
- Leaders
- Good human relations

Above mentioned points can be explained in detail.

Answer 5 (Optional) *Write the different sources of water. Describe the importance of fresh air.*

- Answers No 05 (Optional):- Sources of water:- Groundwater: The water emerging from some deep ground water may have fallen as rain many tens, hundreds, or thousands of years ago. Soil and rock layers naturally filter the ground water to a high degree of clarity and often it does not require additional treatment other than adding chlorine or chloramines as secondary disinfectants. Such water may emerge as springs, artesian springs, or may be extracted from boreholes or wells. Deep ground water is generally of very high bacteriological quality (i.e., pathogenic bacteria or the pathogenic protozoa are typically absent), but the water may be rich in dissolved solids, especially carbonates and sulfates of calcium and magnesium. Depending on the strata through which the water has flowed, other ions may also be present including chloride, and bicarbonate. There may be a requirement to reduce the iron or manganese content of this water to make it acceptable for drinking, cooking, and laundry use. Primary disinfection may also be required. Where groundwater recharge is practised (a process in which river water is injected into an aquifer to store the water in times of plenty so that it is available in times of drought), the groundwater may require additional treatment depending on applicable state and federal regulations.
- Upland lakes and reservoirs: Typically located in the headwaters of river systems, upland reservoirs are usually sited above any human habitation and may be surrounded by a protective zone to restrict the opportunities for contamination. Bacteria and pathogen levels are usually low, but some bacteria, protozoa or algae will be present. Where uplands are forested or peaty, humic acids can colour the water. Many upland sources have low pH which require adjustment.

- [Rivers](#), [canals](#) and low land reservoirs: Low land surface waters will have a significant bacterial load and may also contain algae, suspended solids and a variety of dissolved constituents.
- [Atmospheric water generation](#) is a new technology that can provide high quality drinking water by extracting water from the air by cooling the air and thus condensing water vapor.
- [Rainwater harvesting](#) or [fog collection](#) which collect water from the atmosphere can be used especially in areas with significant dry seasons and in areas which experience fog even when there is little rain.
- [Desalination](#) of [seawater](#) by [distillation](#) or [reverse osmosis](#).
- [Surface Water](#): Freshwater bodies that are open to the atmosphere and are not designated as groundwater are termed surface waters.

Importance of fresh air:-

- Fresh air is good for digestion
- Improves your blood pressure and heart rate
- Fresh air makes you happier
- Strengthens your immune system
- Fresh air cleans your lungs
- You will have more energy and sharper mind

UNIT-V Short notes on the followings:-

Answer No.6 (i) School Hygiene:- School hygiene or school hygiene education is a [healthcare science](#), a form of the wider [school health education](#). School hygiene is a study of school environment influence; it explores affection of schooling to [mental](#) and physical health of students.

The primary aims of school hygiene education is to improve behavior through useful practices connected to personal, water, food, domestic and [public hygiene](#). Also, it aims to protect water and food supplies and to safely manage environmental factors. etc...

(ii) AIDS- Causes and Prevention:- AIDS stands for the Acquired Immune Deficiency Syndrome.

- **Acquired** means that it is something people acquire from outside.
- **Immune** refers to the immune system, the body's defense mechanism against germs and infections

D- Deficiency indicates a lack or weakening of (the immune system)

S- Syndrome refers to the presence of a group of signs and symptoms.

AIDS is caused by an organism called HIV (Human Immunodeficiency Virus)

Mode of Transmission/ Causes of AIDS:-

- Sexual Transmission
- Blood Transmission
- Mother to child Transmission
- It is observed that extra-marital sex is the primary mode of infection, 80% of AIDS patients identified. Etc.

Prevention:- At present prevention is the only cure for AIDS. Since AIDS is a sexually transmitted disease, sexual behavior is the prime focus of action for interrupting transmission.

- Safer sex activities
- Preventing blood borne transmission among drug injectors.
- Counseling and contraceptive services should be made available for all men and women.
- For preventing transmission from mother to child is, to prevent sexual transmission of HIV to women of reproductive age. Etc...

Answer No.6 (Optional) Short notes on the followings:-

- **Cholera:- Cholera** is an infection of the [small intestine](#) caused by the [bacterium *Vibrio cholerae*](#). The main symptoms are watery [diarrhea](#) and [vomiting](#). This may result in dehydration and in severe cases grayish-bluish skin. Transmission occurs primarily by drinking water or eating food that has been contaminated by the [feces](#) (waste product) of an infected person, including one with no apparent symptoms. The severity of the diarrhea and vomiting can lead to rapid [dehydration](#) and [electrolyte](#) imbalance, and death in some cases. The primary treatment is [oral rehydration therapy](#), typically with oral rehydration solution, to replace water and electrolytes. If this is not tolerated or does not provide improvement fast enough, [intravenous](#) fluids can also be used. [Antibacterial](#) drugs are beneficial in those with severe disease to shorten its duration and severity.

Worldwide, it affects 3–5 million people and causes 100,000–130,000 deaths a year as of 2010. Cholera was one of the earliest infections to be studied by [epidemiological](#) methods.

Communicable disease: - Communicable diseases, also known as infectious diseases or transmissible diseases, are illnesses that result from the infection, presence and growth of pathogenic (capable of causing disease) biologic agents in an individual human or other animal host. Infections may range in severity from asymptomatic (without symptoms) to severe and fatal. The term infection does not have the same meaning as infectious disease because some infections do not cause illness in a host.

Disease causing biologic agents include viruses, bacteria, fungi, protozoa, multicellular parasites, and aberrant proteins known as prions. Transmission of these biologic agents can occur in a variety of ways, including direct physical contact with an infectious person, consuming contaminated foods or beverages, contact with contaminated body fluids, contact with contaminated inanimate objects, airborne (inhalation), or being bitten by an infected insect or tick. Some disease agents can be transmitted from animals to humans, and some of these agents can be transmitted in more than one way.

In other words a disease results from infection capable of being directly or indirectly transmitted from man to man, animal to animal from environment like through air, dust, soil, water, food etc to man and to animal. There are many communicable diseases like AIDS, small pox, measles, whooping cough, tuberculosis, viral hepatitis B, typhoid, malaria, rabies, tetanus etc...