

PHYSIOLOGY & HYGIENE

Part – I	75 Marks
Part – II	75 Marks
Total	150 Marks

Part-I (Class-IX)	Marks: 75	Time: 2:30 Hours
-------------------	-----------	------------------

Chapter-1 : Our food and Eating Habits

- Ingredients Carbohydrates proteins, fats, mineral salts vitamins and water
- Energy requirements of the cells source of energy, food stuff chemical composition and nature of food stuffs, nutritional requirements.
- Balanced diet-quantity (calorific value of food) and quality
- Eating habits –regular meal time, hygiene of hands and mouth care of teeth and proper mastication, avoidance of over-eating.

Chapter-2 : Building Materials of Home Body

- Protoplasm-Brief outline of physical and chemical nature
- Cell-membranes/cytoplasm, and their functions
- Tissues-Epithelial, muscular, cartilage and bone
- Organs (only definition with few examples)

Chapter-3 : Types of micro organisms

A brief description of the nature of organisms; included in categories and the environment in which they survive and grow their importance for human beings.

- | | |
|-------------|--------------------------|
| a) Microbes | b) Viruses |
| c) Bacteria | d) Unicellular organisms |

Chapter-4 : Digestive system

- Digestive organs-External morphology of mouth (Tooth) Tongue, Salivary gland) Gullet Stomach, Intestines (Small and Large) Liver, gall-bladder and pancreas.
- Mechanism of digestion,

i. Digestion in mouth	ii. Digestion in stomach
iii. Digestion in intestines (Small and Large)	
- Assimilation of food

Chapter-5 : Circulatory System

- Organs-Structure of heart and blood vessels (Arteries, Veins and Capillaries)
- Function of heart and blood vessels
- Blood-Composition and functions, for example, transportation coagulation and temperature control
- Blood transfusion and blood groups

Chapter-6 : Respiratory system

- Organs-structure and function of nose, pharynx, trachea, bronchi and lungs (Brief discussion of all except lungs which should be discussed in detail)
- Mechanism of respiration.

i. Breathing (Inspiration and expiration)	ii. Exchange and transportation of gases
iii. Respiration in tissues-exchange of gases	

Chapter-7 : Excretory System

- What is excretion
- Excretory organs structure of kidney, structure of skin (The structure of lungs have already been discussed in the respiratory system)
- Physiology of excretion

i. The role of kidney in excretion	ii. The role of skin in excretion
------------------------------------	-----------------------------------

Part-II (Class-X)	Marks: 75	Time: 2:30 Hours
-------------------	-----------	------------------

- Chapter-8 : Nervous system
- Morphology of central nervous system. Brain; Spinal Cord
 - Morphology of the neuron
 - The organization of nerves; Sensory and motor nerves
 - The nerve impulse
 - The reflex action
 - Function of the Nervous System. A brief description of the functions of various segments of brain.
 - Sympathetic and para sympathetic nervous system
 - Sense organs and their functions (Detailed account of eye and ear and briefly mention others)
- Chapter-9 : Hormones
- The secretion of Hormones from Endocrine Glands. The nature of Hormones. Major functions of following Hormones.
- Growth of Hormones
 - Thyroxin
 - Insulin
 - Adrenalin
- Chapter-10 : Support and Locomotion
- Functional morphology of muscle, cartilage and bone
 - Skeleton (in practical only)
 - Health of bones-role of calcium, phosphorus and vitamin D
- Chapter-11 : Physiology of Exercise
- Oxygen requirements.
 - Respiratory adjustments
 - Circulatory. System adjustment
 - Metabolic change in muscles
- Chapter-12 : Hygiene of Living in Rural and Urban Areas
- Air. Composition, importance, contamination
 - Water. Composition, importance, sources of water contamination
 - Soil, importance, contamination
 - Houses. Importance of living space, light ventilation and cleanliness
- Chapter-13 : Principle of personal and community hygiene
- Personal-Body cleanliness, eating and drinking, daily movement of bowels, clothing (avoid tight dress, frequently change under clothes and exercise, etc.
 - Community-proper maintenance of public place like parks, hospitals offices, cinemas, etc; proper disposal of wet, and dry refuse. Smoking and spitting at public places, etc, should be discouraged.
- Chapter-14 : Diseases
- Origin
 - Dietary
 - Metabolic
 - Hereditary
 - Contagious
 - Parasitic
 - Causative agents

Virus, Bacteria, Protozoa, Arthropod, Helminthis
 - Common diseases and their preventive measures
 - Small pox
 - Measles
 - Typhoid
 - Cholera
 - Chicken pox
 - Rabies
 - Diphtheria
 - Whooping cough
 - Mumps
 - Tetanus
 - Malaria
 - Worm
 - Infection
 - Diarrhea and dysentery
 - Diseases due to insect infection
 - Skin diseases
- Chapter-15 : Socio-Economic Factors in National health

- ## SUGGESTED EXPERIMENTS

Experiment No.1	Identification of carbohydrates, proteins and fat by using Benedict's Solution Iodine Solution, Midlon's Reagent and paper	
Experiment No.2	Detection of Amylase in saliva and its effect on starch by using iodine method	
Experiment No.3	Microscopic study of blood (R.B.C. and W.B.C), using Leishment's Solution	
Experiment No.4	Examination of capillary circulation in the web of frog	
Experiment No.5	(a) For study of trachea and lungs, sheep's wind pipe and lungs could be displayed (b) Demonstration of the mechanism of respiration (by using bell-jarparchment), Y-shaped glass tube and counting of pulse	
Experiment No.6	Demonstration of muscle contraction by at least one of the methods listed below (a) Mechanical (Pinching) (c) Electrical (Dry cell)	
	(b) Chemical (Sodium Chloride)	
Experiment No.7	Examination of the following prepared slides under the microscopic (a) Nerve cell (c) Epithelia cells (e) Bone	
	(b) Muscle cell (d) Cartilage	
Experiment No.8	Study of structure of eye and heart by using models, charts and dissection.	
Experiment No.9	Study of ear by model of carts or film slides of Transparency	
Experiment No.10	Study brain preserved in 4% formulin solution	
Experiment No.11	Microscopic examination of polluted water	
Experiment No.12	Morphological study of following insects (a) Mosquito (c) Cockroach (e) Louse	
	(b) Bed bug (d) House fly	
Experiment No.13	Study of human skeleton with help of bones, charts film slides and transparencies	
Experiment No.14	(a) Use of clinical thermometer (b) Lactometer	
Experiment No.15	Exhibition of insecticides and gemicides	
Experiment No.16	Cleaning of school premises, houses and surroundings	

Authors: Dr. Jamal –ud-Din Dr. S.A. Wajid
Published by: Publisher M/S Shaheen Publisher, Lahore
Physiology and Hygiene (English Version)
Publisher kitabistan Publishing Co., Lahore
Author as in Urdu Version
For: Punjab Curriculum and TextBook Board, Lahore

