

## Semester II Human Physiology

### OBJECTIVES:

1. The students will understand the basic structure and functions of the human body
2. Student will be acquainted with common diseases/disorders of each system

Course	TC	Th C	Pr C	Int M	Ext M	Total
<b>Human Physiology</b>	4	3	1	25	75	100

### Human Physiology Theory

Module No.	Objective	Content	Evaluation
1	<p>This will enable students to:</p> <ol style="list-style-type: none"> <li>1. Introduce students to basic terminologies</li> <li>2. Understand the basic structure of human body</li> <li>3. Understand the functioning of cardio vascular, respiratory, gastro intestinal</li> <li>4. Brief knowledge about common diseases affecting each system.</li> <li>5. To create awareness about interdependence and coordination between different systems of the body for</li> </ol>	<p><b><u>INTRODUCTION</u></b></p> <ul style="list-style-type: none"> <li>• General terms- anatomy, physiology, symmetrical arrangement, anatomical position. Median plane / lateral plane, internal/ external, superficial /deep, superior/ inferior, anterior/posterior.</li> <li>• Basic human tissues.</li> <li>• Introduction to human skeleton.</li> <li>• Structure of bone and cartilage.</li> <li>• Classification of various types of muscle.</li> </ul> <p><b><u>BLOOD AND LYMPHATIC SYSTEM</u></b></p> <ul style="list-style-type: none"> <li>• Physical characteristics of blood</li> <li>• Blood volume, composition of plasma and functions of plasma protein</li> <li>• RBC formation and functions</li> <li>• Information about anaemia and thalassemia.</li> <li>• Blood groups, their importance, Rh-incompatibility.</li> <li>• WBC- types, functions, importance of CBC</li> <li>• Platelets and mechanism of coagulation</li> <li>• Lymph and lymphatic system, spleen and its functions.</li> </ul> <p><b><u>HEART</u></b></p> <ul style="list-style-type: none"> <li>• Its structure and circulation of blood.</li> <li>• Cardiac cycle</li> <li>• Information about hypertension &amp; ischemic heart disease</li> </ul> <p><b><u>RESPIRATORY SYSTEM</u></b></p> <p>Respiratory organs-nose, sinuses, larynx, trachea, bronchi lung brief structure and functions. Mechanism of respiration, factors affecting efficacy of respiration. Various lung volumes and capacities.</p> <p>Common diseases- TB, asthma, bronchitis, cough, pneumonia sinusitis.</p>	<ul style="list-style-type: none"> <li>• Multiple choice questions</li> <li>• Short notes</li> <li>• Display</li> <li>• Quiz</li> </ul> <p style="text-align: center;">5 marks</p>

	normal functioning.	<p><b><u>GASTRO - INTESTINAL SYSTEM</u></b>  Oral cavity, tonsils, pharynx, oesophagus, stomach small and large intestine - brief structure and functions.  Liver, gall bladder, pancreas structure and functions.  Common disorders- Dental caries, vomiting. diarrhoea, constipation. Hyperacidity, diabetes.</p>	
2	<p>This will enable students to:</p> <ol style="list-style-type: none"> <li>1. Understand the functioning of excretory system and brief knowledge about common diseases affecting this system.</li> <li>2. Know more about the nervous system</li> </ol>	<p><b><u>EXCRETORY SYSTEM</u></b></p> <ul style="list-style-type: none"> <li>• Structure and function of organs of urinary system (in brief).</li> <li>• Mechanism of urine formation</li> <li>• Common diseases- urinary tract infection and renal stones.</li> <li>• Structure and function of skin</li> <li>• Regulation of body temperature</li> <li>• Common disorders - acne dandruff and burns.</li> </ul> <p><b><u>NERVOUS SYSTEM</u></b></p> <ul style="list-style-type: none"> <li>• Classification of nervous system</li> <li>• Structure and functions of different parts of brain, spinal cord and reflex action.</li> <li>• Eye - structure and mechanism of vision</li> <li>• Common problems - conjunctivitis, cataract.</li> <li>• Ear - structure and mechanism of hearing</li> <li>• Common problems - deafness, vertigo, motion sickness</li> </ul>	<ul style="list-style-type: none"> <li>• Multiple choice questions.</li> <li>• Short notes.</li> <li>• Display.</li> <li>• Quiz.</li> <li>• PPT presentation</li> </ul> <p>5 marks</p>
3	<p>This will enable students to:</p> <ol style="list-style-type: none"> <li>1. know more about the endocrine system</li> <li>2. Have knowledge of reproductive system and importance of reproductive health</li> </ol>	<p><b><u>ENDOCRINE SYSTEM</u></b></p> <ul style="list-style-type: none"> <li>• Listing of endocrine glands and their location</li> <li>• Functions of pituitary, thyroid, parathyroid and adrenal.</li> </ul> <p><b><u>REPRODUCTIVE SYSTEM</u></b></p> <p><b><u>FEMALE REPRODUCTIVE SYSTEM</u></b></p> <ul style="list-style-type: none"> <li>• Structure</li> <li>• Menstrual cycle</li> <li>• Fertilization</li> <li>• Breast- Structure, function, importance of breast hygiene and breast feeding</li> <li>• Physiological changes in pregnancy</li> <li>• Importance of ante-natal care.</li> </ul> <p><b><u>MALE REPRODUCTIVE SYSTEM</u></b></p> <ul style="list-style-type: none"> <li>• Structure</li> <li>• Sex education</li> <li>• Contraception and infertility</li> <li>• Sexually transmitted diseases-syphilis, gonorrhoea, AIDS</li> </ul>	<ul style="list-style-type: none"> <li>• Multiple choice questions.</li> <li>• Short notes.</li> <li>• Display.</li> <li>• Quiz.</li> <li>• PPT presentation</li> </ul> <p>5 marks</p>

**EVALUATION:**

- 1) Internal – Theory 15 marks + Practical 10 marks = 25 marks
- 2) External : Theory 50 marks + Practical 25 marks = 75 marks
- 3) Total : Internal -25 + External - 75 = 100 marks

**REFERENCES :**

- 1) Guyton, A.C., Hall J.E.- Textbook of Medical Physiology - Prism Books Pvt Ltd., Bangalore.
- 2) Concise Medical Physiology - Chaudhari.
- 3) API Text Book of Medicine.
- 4) Textbook of Gynaecology - Datta.
- 5) Winwood - Sear's Anatomy and Physiology for Nurses - London, Edward Arnold .
- 6) Wilson -Anatomy and Physiology in Health and Illness, Edinburgh, Churchill Livingstone.
- 7 ) Chatterjee Chandi Charan -Textbook of Medical Physiology - London. W.B. Saunder's company.

**Human physiology (Practical)**

Module No.	Objective	Content	Evaluation
4	<p>This will enable students to:</p> <ol style="list-style-type: none"> <li>1. Introduce the students to human skeleton and enable them to identify various bones in the body</li> <li>2. perform simple clinical tests like estimation of haemoglobin and blood group and blood pressure</li> <li>3. Utilize the knowledge learnt to administer first aid for common emergency situations.</li> <li>4. Acquaint the students with the basic principles of home nursing.</li> </ol>	<ol style="list-style-type: none"> <li>1.Study of human skeleton and identification of bones.</li> <li>2.Estimation of haemoglobin</li> <li>3.Estimation of blood groups,</li> <li>4.Demonstration of peripheral blood smear. Importance of complete blood count.</li> <li>5.Measurement of pulse rate and blood pressure.</li> <li>6.Discussion of normal components of urine. Test for abnormal components like sugar, albumin and acetone and discussion on diseases in which they are found.</li> <li><b>7.FIRST AID</b></li> <li>-Definition, aims, qualities of first aider, contents of first aid box.</li> <li>-Different types of bandages and bandaging techniques.</li> <li><b>WOUNDS</b></li> <li>-Classification, dressing and management of haemorrhage- basic principles and discussion about bleeding from various parts of body.</li> <li><b>FRACTURE</b></li> <li>-Types, symptoms, management.</li> <li>Sprain and dislocation</li> <li><b>First Aid for-</b> foreign bodies in eye, ear, nose, skin.</li> <li><b>First Aid for -</b> fainting, burns, heat stroke, asthma, convulsions, electric shock and heart attack.</li> <li><b>First Aid for -</b> common poisoning, dog bite, snake bite, bee-sting and scorpion bite.</li> <li><b>BASIC PRINCIPLES OF HOME NURSING-</b></li> <li>Measuring body temperature, steam inhalation, body sponging, taking care of bed ridden patient and enema.</li> <li>8)Cardio pulmonary resuscitation</li> </ol>	10 marks

External : Practical exam - 25 marks + Theory - 50 marks = 75 marks

**REFERENCES :**

<b>S. No.</b>	<b>Title of the Book</b>	<b>Author</b>
1.	Book of Clinical Medicine	Hutchinson's
2.	First Aid	St .John's Ambulance Association