

**SRI VENKATESWARA UNIVERSITY**  
**B.Sc. DEGREE COURSE IN PARAMEDICAL TECHNOLOGY**  
**(Syllabus under CBCS w.e.f. 2020-21)**

**PARAMEDICAL**



*(With Learning Outcomes, Unit-wise Syllabus, References, Co-curricular Activities  
& Model Q.P.)*  
**(To be Implemented from 2020-21 Academic Year)**

## Domain Subject: MARKET ORIENTED COURSE PARAMEDICAL SCIENCE

### *Activities, References & Model Q.P For Five Courses of 1, 2, 3, 4 & 5 Semesters)*

“The domain subject “PARAMEDICAL SCIENCE”, embracing the fields of human anatomy, human physiology, bio chemistry and hematology and microbiology. This course is meant for providing employment opportunities for the graduates in the paramedical sector.

#### GENERAL CURRICULAR ACTIVITIES

##### Lecturer-based:

- 1) **Class-room activities:** Organization of Group discussions, question-answer sessions, scientific observations, use of audio-visual aids, guidance programmes, examination and evaluation work (scheduled and surprise tests), quizzes, preparation of question banks, student study material, material for PG entrance examinations etc.
- 2) **Library activities:** Reading books and magazines taking notes from prescribed and reference books and preparation of notes on lessons as per the syllabus; Reading journals and periodicals pertaining to different subjects of study; Making files of news-paper cuttings etc.
- 3) **Lab activities:** Organization of practicals use of virtual laboratory , maintenance of lab attendance registers/log registers, maintenance of glassware and chemicals
- 4) **Activities in the Seminars, workshops and conferences:** Organization of at least one seminar/workshop/conference per academic year either on academic/research aspects and inculcate research spirit among students
- 5) **Research activities:** Student study projects (General / RBPT model), Minor or Major research projects, Research guidance to research scholars, Publication of research articles/papers (at least one in 2 years) in UGC-recognized journals, Registration in Vidwan/Orcid/Scopus/Web of Science
- 6) **Smart Classroom Activities:** Organization of Departmental WhatsApp groups, Ed Modo groups/Google Class Rooms/Adobe Spark groups for quick delivery of the subject; Preparation of Moocs content & presentation tube lessons by trained lecturers; Using smart/digital/e- class rooms (mandatory) wherever present; Utilization of YouTube videos (subject to copy rights) etc.

##### Student-based:

- 1) **Class-room activities:** Power point presentations, seminars, assignments
- 2) **Library activities:** Visit to library during library hour and preparation of notes
- 3) **Lab activities:** Maintenance of observation note book and record, keeping lab clean and tidy
- 4) **Activities in the Seminars, workshops and conferences:** Participation/presentation in seminar/workshop/conference

## CO-CURRICULAR ACTIVITIES

### OBJECTIVES:

The co-curricular activities are aimed at strengthening the theoretical knowledge with an activity related to the content taught in the class room. The aesthetic development, character building, spiritual growth, physical growth, moral values, creativity of the student.

The different types of co-curricular activities relevant to Sericulture domain are listed below:

### Academic – based

- Preparation of Charts/Clay or Thermocol Models
- Debates, Essay Writing Competitions
- Group Discussions
- Departmental magazine
- Formation of Book clubs
- Paramedical importance album-making
- Viva-Voce

### Lab/Research –based

- Documentaries
- Field Visit/Excursions/to Paramedical centres
- Training at paramedical centres
- Exposure to scientific instruments and hands-on experience

### Value - based

- Organization of works shop with the doctors from the primary health centres for awareness on the role of paramedics in the Medical & healthsector

### ➤ Observation of Days of National/International Importance

World Cancer Day (February 4th )	International Biological Diversity Day (May 22 <sup>nd</sup> )
Darwin Day (February 12 <sup>th</sup> )	World Turtle Day (May 23 <sup>rd</sup> )
National Science Day (Feb 28 <sup>th</sup> )	World blood Donor Day (June 14 <sup>th</sup> )
World Wildlife day (March 3 <sup>rd</sup> )	World Zoonoses Day (July 6 <sup>th</sup> )
National Vaccination Day (March 16 <sup>th</sup> )	World Mosquito Day (August 20 <sup>th</sup> )
World Health Day (April 7 <sup>th</sup> )	World Turtle Day (May 23 <sup>rd</sup> )
Earth Day (April 22 <sup>nd</sup> )	World Mosquito Day (August 20 <sup>th</sup> )
Malaria Day (April 25 <sup>th</sup> )	World Animal day (October 4 <sup>th</sup> )
World Hepatitis Day (May 19 <sup>th</sup> )	World Fisheries Day (November 21)
National Doctors Day (July 1)	Blood Donor's Day- (June 14)

**SRI VENKATESWARA UNIVERSITY**  
**B.Sc. DEGREE COURSE IN PARAMEDICAL TECHNOLOGY**

**FIRST YEAR - SECOND SEMESTER**  
**(Syllabus under CBCS w.e.f. 2020-21)**

**Core Course Paper-II: HUMAN PHYSIOLOGY**

**Course Outcomes:** By the completion of the course the graduate should be able to –

**CO1:** Describe the structure and contraction of muscle

**CO2:** Explain the structure and functions of Integumentary system

**CO3:** Describe the structure and physiology of gastrointestinal tract

**CO4:** Explain physiology of sense organs

**CO5:** Describe the transport functions of the biological membranes

**Learning objectives**

1. To understand the structure and contraction of muscle .
2. To understand the structure and functions of Integumentary system .
3. To understand the structure and physiology of gastrointestinal tract .
4. To understand the physiology of sense organs
5. To understand the transport functions of the biological membranes

**SYLLABUS**

**UNIT- 1**

- 1.1 Anatomy & Physiology of Muscle: Muscle types & functions, Microscopic anatomy of skeletal muscles skeletal muscle activity;
- 1.2 Structure in brief, mechanism of muscle contraction, isotonic and isometric contractions, energy sources of muscle contractions, motor unit.
- 1.3 Excitation – contraction coupling Muscle movement's types, and Types of body movements

**UNIT- 2**

- 2.1 Support & Movement : Skin and Its Appendages, Skeletal Tissues, Skeletal System Articulations,
- 2.2 Classification of body membranes (cutaneous, mucous, serous, and connective membranes),
- 2.3 Integumentary system (skin), Basic skin functions, Structure of the skin (epidermis & dermis), Skin color.

**UNIT- 3**

- 3.1 Gastro intestinal tract: Functional anatomy of G.I.T
- 3.2 Functions of G.I secretions
- 3.3 Principles of secretion and movements of GIT.

#### **UNIT-4**

4.1 Special Senses: Vision: Structure of eyeball, retina, visual pathway, accommodation, visual acuity, error of refraction, color vision. Hearing:

4.2 Brief account external, middle and inner ear, hearing tests.

4.3 Taste & Smell: receptors, pathways, method of transduction.

#### **UNIT-5**

5.1 Cell junctions, cell membrane transport- a) Simple diffusion through lipid layer, protein layer, types of protein channels or ion channels .

5.2 b) passive transport c) active transport-Primary active transport, Secondary active transport,

5.3 Electroencephalogram (EEG), Physiology of sleep, Epilepsy.

#### **Reference Books:**

1. Ross & Wilson Anatomy & Physiology in Health & Illness by Waugh(A).
2. Textbook of Medical Physiology by G.K.Pal.
3. Review of Medical Physiology by Ganong.
4. Samson Wrights Applied Physiology.
5. Text book of Medical Physiology by Guyton(AC)
6. Seeley's Essentials of Anatomy & Physiology, 9<sup>th</sup> Edition.

**SRI VENKATESWARA UNIVERSITY**  
**B.Sc. DEGREE EXAMINATION IN PARAMEDICAL TECHNOLOGY**

**FIRST YEAR - SECOND SEMESTER**  
**(Syllabus under CBCS w.e.f. 2020-21)**

**Core Course Paper-II: HUMAN PHYSIOLOGY**  
**MODEL QUESTION PAPER**

**Time : 3 hrs**

**Max. Marks : 75**

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**SECTION –I**

**Answer any FIVE of the following**

**5x5 = 25 Marks**

**(Draw labelled diagrams wherever necessary)**

1. Skeletal muscles.
2. Muscle functions.
3. Skin-appendages.
4. G.I.T Secretions.
5. Structure of G.I.T.
6. Colour vision.
7. Cell junctions.
8. Smell-receptors.

**SECTION –II**

**Answer ALL the questions each question carries 10 marks**

**5x10=50 Marks**

**(Draw diagrams wherever necessary)**

9. (a) Write about microscopic anatomy of skeletal muscles. (or)  
(b) Explain about mechanism of muscle contraction.
10. (a) Describe about skeletal tissues & skeletal system articulations. (or)  
(b) Classify body membranes and explain it.
11. (a) Write about principle secretions & movements of G.I.T. (or)  
(b) Describe about G.I.T.
12. (a) Explain about external & middle ear.(or)  
(b) Describe about method of transduction.
13. (a) Write about passive transport. (or)  
(b) Write about different types of protein channels.

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**Practical Paper-II: HUMAN PHYSIOLOGY**

1. Measurement of human electrocardiogram(ECG).
2. Analysis of human bloodpressure.
3. Measuring the respiratoryfunction
4. Monitoring of muscle activity by electromyography(EMG).
5. Experiments on the hearing system- Rinne tuning forktest
6. Measuring hearing acuity by pure tone audiometry(PTA).
7. Some to sensory receptors
8. The optical system of the eye and theretina.
9. Examination of bioelectrical signals accompanying brainfunction(EEG)
10. Rapid immunological assay determining human chorionic gonadotropin(HCG)
11. Descriptions of the used physical, chemical and mathematical units, conceptsand procedures.