

# **TRIPURA UNIVERSITY**

**(A Central University)  
Suryamaninagar-799022**

**Syllabus**

**OF**

**Human Physiology  
(General & Major)**

**Semester - IV**

**2014**

## HUMAN PHYSIOLOGY HONOURS (TDPH)

Semester-04

PAPER-04 (H4A)

Total Marks: 60

### UNIT- IX : Respiratory system & Aviation Physiology (30 Marks)

1. Anatomy and histology of respiratory tract and organs ; Muscles of respiration.
2. Mechanics of breathing : Mechanism of breathing, Respiratory pressures, Lung compliance, Surfactant, airway resistance.
3. Pulmonary function test : Lung volume and capacities: Spirometry : measurement of Vital capacity, FVC, Timed Vital Capacity ( FEV1), MVV/ MBC), PEF/ R with their significance.
4. Course , peculiarities and control of pulmonary circulation.
5. Transport of O<sub>2</sub> and CO<sub>2</sub> , O<sub>2</sub> dissociation curve- factors affecting and significance.
6. Regulation of respiration- neural and chemical.
7. Hypoxia- Types , causes and effects;
8. Basic concepts on Asphyxia, Apnoea, Hyperpnoea, Cyanosis, Periodic breathing, Dyspnoea, Chronic obstructive pulmonary diseases-asthma, restrictive pulmonary disease-emphysema.
9. High altitude physiology : Barometric and partial pressure of O<sub>2</sub> at high altitude, changes in the body in high altitude, motion sickness; acclimatization to high altitude.
10. Aviation Physiology- Accelerative and gravitational force, effects of positive and negative G force on body, space physiology- effects of weightlessness on Cardio-vascular system, musculoskeletal system, blood, immune system; space motion sickness.

### UNIT X: ERGONOMICS AND SPORTS PHYSIOLOGY

1. Scope & application of ergonomics and work physiology  
Static & Dynamic work ; Classification of work and exercise.
2. Energy cost of different physical activities- its determination; Ergometry- working principle of ergometers- bicycle and treadmill.
3. Importance of measurement of different physiological parameters such as heart rate (pulse rate) , O<sub>2</sub> – consumption , blood pressure etc
4. Anthropometry in ergonomics- common anthropometric measurements used in work place design.
5. Muscles in exercise-strength , power & endurance of muscles; Muscle metabolic system in exercise (energy source during muscular exercise); Nutrients used during exercise.
6. Physiological changes during exercise- cardiovascular(circulatory) & respiratory changes; steady state; second wind.; Fatigue- causes.
7. Metabolic changes during exercise- anaerobic power (capacity); Maximal aerobic power (VO<sub>2</sub>max) – its determination & significance, Recovery of metabolic systems after exercise, O<sub>2</sub> debt- lactic acid & alactic acid
8. Exercise training: principles of training; aerobic & anaerobic training; Effects of training on muscles, cardiovascular (circulation), respiratory systems.
9. Nutrition/diet in athletics performance – pregame meal; glycogen/carbohydrate loading .
10. Doping in sports; ethical issues; harmful effects of caffeine, steroids, amphetamine and cocaine abuse on health.

# HUMAN PHYSIOLOGY

TDPH, 4<sup>th</sup> Semester, Practical

PAPER-II4B

Marks- 40

## Group-A

1. Spirometric determination of VCL, FVC, FEVL, FIV, P<sub>50</sub>, MVV
2. Determination of heart rate, P-R interval, Q-T, QRS duration and S-T segment from electrocardiogram.
3. Determination of electrical axis of heart from standard limb leads electrocardiogram.
4. Effect of posture and exercise on blood pressure.
5. Determination of VO<sub>2</sub> max by Queens College Step Test.

## Group-B

6. Prediction of BMR using prediction equation of ICMR & determination of BMR of a person from the graphical record of Benedict Roth apparatus from the supplied graphical record.
7. Estimation of body fat by using skin fold method
8. Determination of respiratory rate by pneumograph: Effect of Hyperventilation, Breath holding & exercise on respiratory pattern.

## Group-C

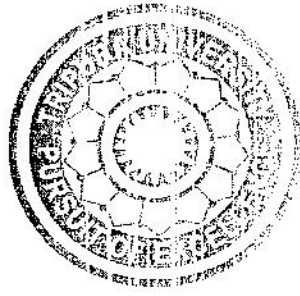
9. Determination of PFI by Harvard step test and graphical representation of recovery pulse rate.
10. Determination of muscle strength & endurance by Hand Grip Dynamometer.
11. Determination of muscular efficiency by ergography.

## Distribution of marks:

TOTAL MARKS:	40
Internal Assesment:	08
Term end Exam:	32

A. Group A (Any one experiment):	08
B. Group B (Any one experiment):	08
C. Group C (Any one experiment):	08
D. Practical notebook:	04
E. Viva voce:	04

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(A CENTRAL UNIVERSITY)

SURYAMANINACAR, 799022

Syllabus for

**B. Sc. TDPG**

**HUMAN PHYSIOLOGY**

SEMESTER-IV (GENERAL)

YEAR 2015



HUMAN PHYSIOLOGY

TOPG , 4<sup>th</sup> SEMESTER, PRACTICAL

PAPER-P4B

MARKS:50

1. Histological slides and models on brain and endocrine system: Study of anatomical position, structure and function
2. Model of reproductive system: Study of reproductive system: organs in female pelvic cavity-their anatomical position, structure and function ( uterus, cervix, fallopian tube, ovary)
3. Histological slides on ovary, uterus, and testis- Study of Primary, Secondary, Tertiary graafian follicles, corpus luteum, oocyte etc. sperm.
4. Models of Eye, ear, nose, skin and tongue- structure and function of different parts
5. Tests for detecting defects of color vision
6. Rinne's/Weber's test for deafness.
7. Romberg's sign- Vestibular function.

**Distribution of marks:**

TOTAL MARKS: 50  
Internal Assessment: 10  
Term end Exam : 40

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|------------------------|------------|
| 2. Three experiments:  | 10 X 3 =30 |
| 2. Practical Note book | 05         |
| 3. Viva voce           | 05         |

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