



TRIPURA UNIVERSITY

(A Central University)

Suryamaninagar-799022

Modified Syllabus

For TDPH 6TH SEMESTER EXAMINATION - 2021

HUMAN PHYSIOLOGY (HONOURS)

(PAPER : 7TH & 8TH)

A. Chandra
29.07.2021

Rupanjit Das
29.07.2021

Sankari Das Deb.
29/07/2021

J. Shy
29/7/21

Deb
29/07/2021

MODIFIED 6th Semester Syllabus for B.Sc.Honours

Subject: Human Physiology

Honours Course (TDPH)

Unit 15: Sensory Physiology (25)

1. Olfaction and gustation: Structure of taste buds, mechanism of taste sensation, neural pathways for taste and smell sensation with centres involved.
2. Audition: Structure and function of auditory apparatus, Organ of Corti - histology, function, propagation of sound waves through different parts of ear and their role in hearing, auditory pathway.
3. Vision: Anatomy and structure of eyeball, histology of retina, photochemical changes of retina on exposure to light, visual pathway, reflexes of the eye, accommodation, refractive errors and their remedies.

Reference Books:

1. Medical Physiology - Guyton
2. Basic Physiology - C. C. Chatterjee
3. Ganong

Unit 16: Microbiology, Biotechnology & Immunology (25)

Microbiology

1. Bacteria, virus, fungus - their structure and characteristics, bacterial classification.
2. Bacterial growth cycle and factors (pH, temperature, nutritional requirement), controlling bacterial growth.
3. Brief idea of antibiotics with examples.
4. Some common diseases caused by bacteria, fungus and virus - cholera, eczema and influenza - their symptoms and preventive measures.

Biotechnology

5. Recombinant DNA technology, DNA cloning, cloning vector, restriction endonuclease, cloning of DNA into cloning vectors.

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6. DNA gel electrophoresis

Immunology

7. Immune system, innate and acquired immunity - their components.
8. Primary and secondary lymphoid organs, T-cell, B-cell, macrophage, neutrophil, dendritic cells and their functions.
9. Antigen, Immunogen, Epitope, Hapten, Paratope, MHC molecules, CD-4 and CD-8 markers - general idea.
10. Humoral immunity - general structure of IgG antibodies, Primary and secondary immune responses, clonal selection theory of antibody production.

Reference books:

1. Kuby Immunology
2. Basic immunology- Roit
3. Microbiology- Pelczar, Chan, Creig
4. Biochemistry-Strier

Unit 17: Molecular Biology and Genetics(25)

1. DNA - The genetic material, transformation in pneumococcus (Avery, Macleod and McCarty), Griffith and Hershey-Chase experiments.
2. Semiconservative model of DNA replication.
3. DNA polymerase I and III, DNA ligase, function of different subunits, Okazaki fragments.
4. DNA transcription: Concept of gene, difference between Prokaryotic and Eukaryotic gene. Mechanism of gene transcription, template and non-template strand, promoter sites, RNA polymerase - function of different components of RNA polymerase.
5. Protein synthesis: genetic code, codons, reading frame, Nirenberg's experiment, initiation codon, termination codon, degeneracy of genetic code, Wobble hypothesis.
Mechanism of translation: Activation of amino acid, formation of initiation complex, Shine-Dalgarno Sequence, role of A site and P side.

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Elongation: role of elongation factors, translocation. Termination: role of terminators and release factors.

6. Mutation: Spontaneous and induced mutation, mutagens- chemical & physical, transition and transversion of mutation - mechanism, chemicals inducing transition and transversion.
 7. Chromosomal mutation: structural, inversion, translocation, deletion, duplication, chromosomal number: euploidy, aneuploidy, polyploidy.
- Repair of mutation: Mismatch repair, excision repair.

Reference Books:

Unit 18: Research methodology and Epidemiology(25)

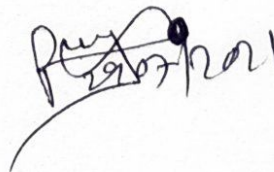
1. Utility of statistics in research, measures of Central tendencies(Mean, median, mode), standard deviation(SD), Standard error of mean(SEM). Basic concepts of - frequency polygon, histogram, nomogram, bar diagram, pie diagram.
2. Definition of epidemiology, recent development in epidemiology, definition, scope and uses of epidemiology, concepts of disease occurrence, chain of infection, epidemic disease occurrence.

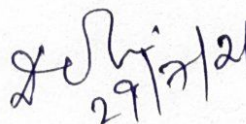
Reference books:

1. Research Methodology- C. R. Kothari
2. Basic Epidemiology- R. Bonita, R. Beaglehole, T Kjellstrom



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H8: Practical (Paper VB)

Marks : 80+20(Internals)

Practical:

A. Microbiology and Immunology (20 marks)

- a. Gram staining of bacteria.

B. Sensory physiology (20 marks)

- a. Models of eye, ear, nose, tongue, skin: structure and functions.
- b. Rinne's / Weber's test for deafness.

C. Molecular biology and genetics (20 marks)

- a. DNA / Protein separation by paper electrophoresis and gel electrophoresis.

D. Research methodology (20 marks)

- a. Mean, Median, Mode, Standard Deviation, Standard Error of Mean (SEM) calculation.

Viva voce (10 marks)

Laboratory Notebook (10 marks)

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