



IMDO

Competition Topics

Molecular and Cell Biology

1. Macromolecules
2. The Structures of the Cell
3. Cell Membrane
4. Passive and Active Transport
5. Metabolism and Enzymes
6. Cellular Respiration
7. Cell Signaling
8. Mitosis
9. Meiosis
10. Mendelian Genetics
11. Chromosomes
12. DNA
13. Replication
14. Transcription
15. Translation
16. Gene Regulation
17. Viruses
18. Bacteria
19. Biotechnology
20. Cell Death
21. Cancer
22. Stem Cells

Human Physiology

1. Organization of the Human Body
2. Homeostasis
3. The Digestive System
4. The Circulatory System
5. The Respiratory System
6. The Immune System
7. The Excretory System
8. The Endocrine System
9. The Reproductive System
10. The Nervous System
11. The Muscular System
12. The Skeletal System
13. The Integumentary System



Human Disease (Focus on disease mechanisms)

Cardiovascular System Diseases

Atherosclerosis
Hypertension
Shock
Myocardial Infarction (Heart Attack)
Hypertrophic Cardiomyopathy
Anemia
 Sickle Cell Anemia
 Iron-Deficiency Anemia
 Vitamin B12-Deficiency Anemia
 Infectious Mononucleosis
Pulmonary Embolism
Hemophilia
Leukemia

Respiratory System Diseases

Respiratory Distress Syndrome of the Newborn
Cystic Fibrosis
Pneumonia
Tuberculosis
Asthma
COPD

Digestive System Diseases

GERD
Gastric and Peptic Ulcer
Lactose Intolerance
Food Poisoning
Appendicitis
Hepatitis
Cholecystitis/Gall Stones
Liver Cirrhosis
Vitamin Deficiencies

Nervous System Diseases

Meningitis
Stroke
Concussion
Multiple Sclerosis
Creutzfeldt-Jacob Disease
Alzheimer's Disease
Parkinson's Disease
Epilepsy



Musculoskeletal System Diseases

Achondroplasia
Sciatica
Scoliosis
Osteoporosis
Osteoarthritis
Rheumatoid Arthritis
Duchenne Muscular Dystrophy
Amyotrophic Lateral Sclerosis

Genetic or Chromosomal Disease

Albinism
Xeroderma Pigmentosum
Phenylketonuria
Tay-Sachs Disease
Down syndrome
Klinefelter syndrome
Turner syndrome

Endocrine System Diseases

Gigantism
Acromegaly
Diabetes Insipidus
Hyperthyroidism
Hypothyroidism
Cushing Syndrome
Type I Diabetes
Type II Diabetes

Immune System and Infectious Diseases

Erythroblastosis Fetalis
Blood Transfusion Reactions
Cholera
Pertussis
Tetanus
Botulism
Lyme disease
Chicken Pox
Influenza
HIV
COVID-19
Malaria
Tapeworm