PHYSIOLOGY

Physiology Mock Test			
Topic	**Lecture**	**Duration**	**Size (MB)**
AIIMS Physiology			
	Lec-01	0:48:41	166
	Lec-02	0:41:21	141
	Lec-03	0:41:28	142
	Lec-04	0:38:44	132
	Lec-05	0:50:57	174
	Lec-06	0:42:19	144
	Lec-07	0:43:58	150
	Lec-08	0:20:06	69.2
Physiology Test 490			
	Lec-01	0:40:36	138
	Lec-02	0:39:55	136
	Lec-03	0:39:56	136
	Lec-04	0:39:06	133
	Lec-05	0:39:05	136
	Lec-06	0:32:12	110

Physiology Notes	
Physiology Notes	**No. of Pages = 188**

Subject Name	Lecture Number	Lecture Content	Lecture Duration	File Size
PHYSIOLOGY Cardio Physiology	***Lec 01***	◆ Circuitry of the Cardiovascular System ◆ Direction of blood flow ◆ Components of the vasculature ◆ Arteries ◆ Arterioles ◆ Capillaries ◆ Venules ◆ Veins ◆ Velocity of blood flow ◆ Poiseuille's equation ◆ Reynold's Number ◆ Compliance ◆ Mean Pressure in the systemic circulation	0:36:43	125
	Lec 02	◆ Systolic pressure ◆ Diastolic pressure ◆ Pulse pressure ◆ Mean arterial pressure ◆ Venous pressure ◆ PR interval ◆ QRS complex ◆ QT complex ◆ ST segment ◆ T wave ◆ Cardiac action potentials ◆ Phase 0 ◆ Phase 1 ◆ Phase 2 ◆ Phase 3 ◆ Phase 4 ◆ Sinoatrial (SA) node ◆ AV node ◆ Conduction velocity ◆ Absolute refractory period (ARP) ◆ Relative Refractory Period (RRP)	0:42:50	146
	Lec 03	◆ Chronotropic effects ◆ Dromotropic effects ◆ Parasympathetic effects on heart rate and conduction ◆ Negative chronotropic effect ◆ Positive dromotropic effect ◆ Myocardial cells structure Sarcomere ◆ Intercalated disks ◆ Gap junctions ◆ T tubules ◆ Sarcoplasmic reticulum (SR) ◆ Steps in excitation-contraction coupling ◆ Factors that increase contractility ◆ Factors that decrease contractility	0:39:00	133

Subject Name	Lecture Number	Lecture Content	Lecture Duration	File Size
PHYSIOLOGY	***Lec 04***	◆ Length-tension relationship in the ventricles ◆ Sarcomere Length ◆ Frank-Starling relationship ◆ Ventricular pressure-volume loops ◆ isovolumetric contraction ◆ Ventricular ejection ◆ isovolumetric relaxation ◆ Ventricular filling ◆ Venous return, or vascular function, curve	0:42:30	145
	Lec 05	◆ Cardiac output ◆ Ejection fraction ◆ Stroke work ◆ Cardiac oxygen (O2) consumption ◆ Measurement of cardiac output by the Fick principle ◆ Cardiac Cycle ◆ 7 Phases ◆ Atrial systole ◆ Isovolumetric ventricular contraction ◆ Rapid Ventricular ejection	0:37:31	128
	Lec 06	◆ Reduced Ventricular ejection ◆ Isovolumetric ventricular relaxation ◆ Rapid Ventricular Filling ◆ Reduced Ventricular filling (diastasis) ◆ Mitral stenosis ◆ Aortic valve stenosis	0:47:31	142
	Lec 07	◆ Regulation of Arterial pressure ◆ Baroreceptor reflex ◆ Responses of the vasomotor centre ◆ Renin-angiotensin-aldosterone system ◆ Angiotensin-converting enzyme ◆ Cerebral ischemia ◆ Cushing reaction ◆ Chemoreceptors in the carotid and aortic bodies ◆ Vasopressin [antidiuretic hormone(ADH)] ◆ Atrial natriuretic peptide (ANP) ◆ Microcirculation and Lymph Structure of Capillary beds ◆ Fluid exchange across capillaries ◆ Sample calculations using the Startling equation ◆ Lymph, Edema ◆ Endothelium-derived relaxing factor (EDRF)	0:39:48	136
	Lec 08	◆ Local (intrinsic) control of blood flow ◆ Examples of active hyperemia ◆ Histamine,Bradykinin ◆ Serotonin (5-hydroxytrytamine) ◆ Prostaglandins ◆ Coronary Circulation ◆ Carotid sinus baroreceptors ◆ Orthostatic hypotension ◆ Summary of Effects of Exercise ◆ Chemoreceptors in the carotid and aortic bodies, Reynold's Number ◆ ADH,Summary of Responses of Hemorrhage	0:40:35	138

Subject Name	Lecture Number	Lecture Content	Lecture Duration	File Size
PHYSIOLOGY Endocrine Physiology	***Lec 01***	◆ Endocrine Physiology ◆ Overview of Hormones Radioimmunoassay ◆ Regulation of hormone secretion ◆ Negative feedback ◆ Positive feedback ◆ Regulation of receptors ◆ Down-regulation of receptors ◆ Up-regulation of receptors ◆ Cell Mechanisms and Second Messengers ◆ G protein ◆ Adenylate cyclase mechanism	0:40:13	137
	Lec 02	◆ Phospholipase C ◆ Ca2+ Calmodulin mechanism ◆ Steroid hormone and thyroid hormone mechanism ◆ Pituitary Gland (Hypophysis) Hypothalamic-Pituitary relationships ◆ Posterior pituitary hormones ◆ Hormones of the anterior lobe of the pituitary ◆ Growth hormone (somatotropin) ◆ Somatomedins ◆ Actions of growth hormone ◆ Direct actions of growth hormone ◆ Actions of growth hormone via IGF ◆ Pathophysiology of growth hormone ◆ Prolactin ◆ Regulation of prolactin secretion ◆ Actions of prolactin ◆ Pathophysiology of prolactin ◆ Regulation of prolactin secretion ◆ ADH ◆ Regulation of ADH secretion ◆ Oxytocin ◆ Synthesis of thyroid hormones ◆ Regulation of thyroid hormone secretion ◆ Thyroid-stimulating immunoglobulins ◆ Actions of thyroid hormone	0:44:28	152
	Lec 03	◆ Adrenal Cortex and Adrenal Medulla ◆ 21-Carbon steroids ◆ 19-Carbon steroid-Testosterone ◆ 18-Carbon steroids ◆ Regulation of secretion of adrenocortical hormones ◆ Hypothalamic control - corticotropin-releasing hormone (CRH)	0:38:12	130

Subject Name	Lecture Number	Lecture Content	Lecture Duration	File Size
PHYSIOLOGY	***Lec 04***	◆ Renin-angiotensin-aldosterone system Decreases in blood volume ◆ Renin ◆ Angiotensin-I ◆ Angiotensin-II ◆ Aldosterone ◆ Mechanism of aldosterone action on sodium reabsorption at ◆ Model of a putative amiloride-sensitive sodium channel ◆ Actions of glucocorticoids (cortisol) ◆ Stimulation of gluconeogenesis ◆ Actions of mineralocorticoids (aldosterone) ◆ Pathophysiology of the adrenal cortex ◆ Adrenocortical insufficiency ◆ Cushing's syndrome	0:39:40	135
	Lec 05	◆ 21b-Hydroxylase deficiency ◆ Virilization in Women ◆ Endocrine pancreas Glucagon and Insulin Organization of theendocrine pancreas ◆ Cell Types of the Islets of Langerhans ◆ Glucagon ◆ Actions of glucagon ◆ Regulation of Glucagon Secretion ◆ Insulin ◆ Regulation of Insulin secretion ◆ Mechanism of insulin secretion ◆ Insulin receptor ◆ Actions of insulin ◆ Insulin decreases blood glucose concentration ◆ Insulin decreases blood fatty acid and ketoacid concentrations ◆ Insulin decreases blood amino acid concentration ◆ Insulin decrease blood K+ concentration ◆ Insulin pathophysiology - diabetes mellitus ◆ Somatostatin	0:40:32	138
	Lec 06	◆ Diagnosis of GDM with a 100 g glucose load ◆ ADA criteria for the diagnosis of diabetes mellitus, impaired glucose tolerance (IGT), and impaired fasting glucose (IFG) ◆ Classification of glucose transport and HK activity according to their tissue distribution and functional regulation ◆ Paratharmone ◆ Positive Ca2+ balance ◆ Negative CA2+ balance ◆ Parathyroid hormones (PTH) ◆ Distribution of Calcium, Phosphorus, and Magnesium ◆ RANKL -- receptor activator of nuclear factor kappa B ligand ◆ Pathophysiology of hypercalcemia	0:38:33	132

Subject Name	Lecture Number	Lecture Content	Lecture Duration	File Size
PHYSIOLOGY	***Lec 07***	◆ Actions of PTH ◆ Regulation of PTH Biosynthesis and Secretion ◆ Pathophysiology of PTH ◆ MENI Syndrome ◆ MENII Syndrome ◆ Humoral hypercalcemia of malignancy ◆ Disordered calcium homeostasis in granulomatous disease ◆ Management of Acute Hypercalcemia ◆ Pattern of bone loss in primary hyperparathyroidism ◆ Hypoparathyroidism ◆ Pseudohypoparathyroidism type Ia-Albright's hereditary Osteodystrophy ◆ Pathophysiological basis for X-linked hypophosphatemia ◆ Pathophysiology of PTH ◆ Metabolic Activation of Vitamin D	0:39:26	134
	Lec 08	◆ Actions of 1,25-dihydroxycholecalciferol ◆ Calcitonin ◆ Sexual Differentiation ◆ Gonadal sex ◆ Phenotypic sex ◆ Male phenotype ◆ Female phenotype ◆ Male Reproduction Synthesis of testosterone ◆ Leydig cells ◆ 5a-reductase inhibitors (finasteride) ◆ Regulation of tests ◆ Hypothalamic control-GnRH ◆ Anterior pituitary-FSH and LH FSH acts on the Sertoli cells ◆ Negative feedback control-testosterone and inhibin ◆ Factors that influence the level of SHBG in plasma ◆ Action of testosterone or dihydrotestosterone ◆ Puberty ◆ Female Reproduction Theca cells ◆ A human primordial follicle (PF) ◆ Secondary follicle ◆ four subtypes of granulosa cells	0:39:28	134
	Lec 09	◆ Theca interna ◆ Theca interstitial cells ◆ Regulation of the ovary Hypothalamic control - GnRH ◆ Anterior lobe of the pituitary - FSH and LH ◆ Negative and positive feedback control - estrogen and progesterone ◆ Actions of estrogen, Actions of progesterone ◆ Menstrual cycle- Follicular phase ◆ Ovulation (day 15) ◆ Luteal phase (days 15-28) ◆ Secondary FSH rise in women ◆ Two Gonadotropin-Two Cell Concept" of follicle estrogen production ◆ Effects of the LH/FSH surge on egg cumulus expansion in situ	0:41:20	141

Subject Name	Lecture Number	Lecture Content	Lecture Duration	File Size
PHYSIOLOGY	***Lec 10***	◆ Two-cell, two-gonadotropin hypothesis ◆ Menses (day 1-4) ◆ Pregnancy ◆ Fertilization ◆ Parturition ◆ Lactation ◆ Syncytiocytotrophoblasts ◆ Decidua	0:47:18	161
Respiratory Physiology	***Lec 01***	◆ Transpulmonary pressure recoil pressure of the lung ◆ Pleural pressure ◆ Alveolar pressure ◆ Functional residual capacity ◆ Total lung capacity	0:42:17	144
	Lec 02	◆ Question: If someone inhales to 50% TLC ◆ During Inspiration ◆ End Inspiration	0:17:05	59
	Lec 03	◆ Forced expiratory volume (FEV1) ◆ Surfactant ◆ Neonatal respiratory distress syndrome ◆ Resistance of the airways ◆ Lung Volume ◆ Breathing cycle - description of pressures and airflow ◆ During Inspiration ◆ End Inspiration ◆ During Expiration ◆ Compliance of Lung ◆ Laplace's Law ◆ Lung Volume and Capacities ◆ Tidal Volume ◆ Inspiratory reserve volume ◆ Expiratory reserve volume ◆ Residue Volume ◆ Dead Space ◆ Physiologic dead space ◆ Ventilation rate: Minute ventilation and Alveolar ventilation ◆ Lung Capacities ◆ Functional Residual Capacity ◆ Total Lung Capacity (TLC) ◆ Forced expiratory volume (FEV1)	0:41:00	140
	Lec 04	◆ Relationships between pressure airflow and resistance ◆ Contraction or Relaxation of branchial smooth muscle ◆ Lung Volume ◆ Viscosity or density of inspired gas ◆ Case Study ◆ FEV1/FVC ◆ Lung Disease ◆ Restrictive Lung Disease	0:39:34	135

Subject Name	Lecture Number	Lecture Content	Lecture Duration	File Size
PHYSIOLOGY	***Lec 05***	◆ COPD ◆ Fibrosis ◆ Gas Exchange Dalton's law of partial pressures ◆ Partial pressure of O2 and CO2 ◆ Diffusion of gases such as O2 and CO2 ◆ Perfusion-limited and diffusion-limited gas exchange ◆ Oxygen Transport ◆ Hemoglobin Characteristic - globular protein of four subunits ◆ O2 capacity ◆ O2 content ◆ AaDO2 or AaDO2 ◆ Causes of High AaDO2 ◆ Hemglobin - O2 dissociation curve ◆ Why -- Sigmoid shape of the curve	0:39:18	134
	Lec 06	◆ Oxygen Cascade ◆ CO2 Transport ◆ Forms of CO2 ◆ Distribution of CO2 in blood ◆ CO2 Dissociation curve ◆ Causes of Hypoxia ◆ Pulmonary Circulation ◆ Pulmonary Vascular Resistance	0:39:35	135
	Lec 07	◆ Distribution of Pulmonary blood flow ◆ Zone 1-blood flow is lowest ◆ Zone 2-blood flow is medium ◆ Zone 3-blood flow is highest ◆ Regulation of pulmonary blood flow hypoxic vasoconstriction ◆ Fetal pulmonary vascular resistance ◆ Capillary fluid exchange ◆ Shunts Right to left shunts ◆ Left to right shunts ◆ Ventilation/Perfusion Defects V/Q ratio ◆ V/Q ratios in different parts of the lung ◆ V/Q ratio in airway obstruction ◆ Conrol of Breathing ◆ Central control of breathing (brain stem and cerebral cortex) ◆ Ventral respiratory group ◆ Dorsal Respiratory Group ◆ Apneustic centre ◆ Pneumotaxic center ◆ Cerebral cortex	0:40:04	136
	Lec 08	◆ Chemoreceptors for CO2, H+, and O2 Central chemoreceptors in the medulla ◆ Peripheral Chemoreceptors in the carotid and aortic bodies	0:20:02	69

Subject Name	Lecture Number	Lecture Content	Lecture Duration	File Size
PHYSIOLOGY	***Lec 09***	◆ Comparison of Central and Peripheral Chemoreceptors ◆ Lung Stretch receptors ◆ Hering-Breuer reflex ◆ Juxtacapillary receptors ◆ Integrated Responses of the Respiratory System Exercise ◆ Summary of Respiratory Responses to Exercise ◆ Adaptation to high altitude ◆ Summary of Adaptation to High altitude	0:13:13	46
Renal and Acid and Base Physiology	***Lec 01***	◆ Renal and Acid and Base Physiology ◆ Body Fluids ◆ Total body water ◆ Distribution of water Intracellular fluid (ICF) ◆ Extracellular fluid ◆ Body Fluid Fraction of Markers Used to Major	0:39:45	135
	Lec 02	◆ Measuring the volumes of the fluid compartments ◆ Mannitol ◆ Evans blue ◆ Shifts of water between compartments Basic principles	0:37:22	128
	Lec 03	◆ Changes in volume and Osmolarity of Body Fluids ◆ Renal Clearance, Renal Blood Flow (RBF), and Glomerular Filtration Rate (GFR) ◆ Angiotensinconverting enzyme (ACE) inhibitors ◆ Mechanisms fro autoregulation includes ◆ Tubuloglomerular feedback ◆ Measurement of renal plasma flow (RPF) clearance of paraaminohippuric acid (PAH) ◆ Measurement of RBF ◆ Measurement of RBF Measurement of GFR clearance of	0:43:23	148
	Lec 04	◆ Examples of Calculation of GFR ◆ Estimates of GFR with blood urea nitrogen (BUN) and serum ◆ Filtration fraction ◆ Determining GFR-Starling forces ◆ PGC is glomerular capillary hydrostatic pressure ◆ PBS is Bowman's space hydrostatic pressure ◆ Sample calculation of ultrafiltration pressure with the Starling equation. ◆ III. Reabsorption and Secretion Calculation of reabsorption and secretion rates	0:40:44	139

Subject Name	Lecture Number	Lecture Content	Lecture Duration	File Size
PHYSIOLOGY	***Lec 05***	◆ Reabsorption of glucose in the proximal tubulae ◆ Na+ - glucose cotransport ◆ Excretion of glucose ◆ Threshold ◆ Splay ◆ Tm curve for PAH - a secreted substance ◆ Secretion of PAH ◆ Substances with the highest clearances ◆ Substances with the lowest clearances ◆ Substances with clearances equal to GFR ◆ Extracellular fluid volume (ECV) ◆ Reabsorption of glucose family ◆ The secretion or PAH family comprises	0:38:58	130
	Lec 06	◆ NaCl Regulation ◆ Filtration slits ◆ Juxtaglomerular Cells ◆ Macula Densa Cells ◆ Mesanglial Cells ◆ Cells of the Collecting Duct ◆ Intercalated Cells ◆ Principal Cells ◆ Na+ reabsorption along the nephron Proximal tubule ◆ Isosmotic reabsorption water and salt permeable ◆ Renal Active Transport Primary Active Transport ◆ Secondary Active (Facilitated Transport) ◆ Proximal tubule ◆ Middle and late proximal tubules special features ◆ Glomerulotubular balance in the proximal tubule ◆ Mechanism of glomerulotubular balance	0:39:36	135
	Lec 07	◆ Mechanism of glomerulotubular balance ◆ Starling forces in the peritubular capillary blood ◆ Effects of ECF volume on proximal tubular reabsorption ◆ Bicarbonate handling in the early proximal tubule ◆ Middle Proximal Tubule ◆ Late Proximal Tubule ◆ Summary of Proximal Tubule Reabsorption	0:25:46	84
	Lec 08	◆ Without considering the amount of water reabsorption ◆ K+ Reabsorption ◆ Renal Regulation of Urea, Phosphate, Calcium and Magnesium ◆ Parathyroid hormone (PTH) ◆ Loop diuretics (e.g., furosemide) ◆ Magnesium (Mg+) ◆ Concentration and Dilution of Urine Regulation of plasma ◆ Production of concentrated urine ◆ Corticopapillary osmotic gradient high ADH ◆ Courtercurrent multiplication in the loop of Henle ◆ Aquaporins	0:36:57	126

Subject Name	Lecture Number	Lecture Content	Lecture Duration	File Size
PHYSIOLOGY	***Lec 09***	◆ Proximal Tubular Reabsorption Summary of Proximal Tubule Reabsorption Amino Acids, glucose, and Cl- ◆ Thick ascending limb of the loop of Henle ◆ Thin Descending and Ascending Limbs ◆ Late Distal Tubule ◆ Aldosterone ◆ Distal Tubule ◆ Antidiuretic hormone (ADH) increases H2O permeability ◆ Aquaporin ◆ Summary of tubular solute transport ◆ ECF volume is regulated by the interactions of the renin-angio- tensin-aldosterone system	0:40:52	139
	Lec 10	◆ K+ Regulation ◆ Shifts of K+ between the ICF and ECF ◆ Renal Regulation of K+ balance ◆ Glomerular capillaries ◆ Proximal tubule ◆ Distal tubule and collecting duct ◆ Secretion of K+ ◆ Mechanism of distal K+ secretion ◆ Aldosterone ◆ Thiazide and loop diuretics increase K+ secretion ◆ K+ - sparing diuretics ◆ Changes in Distal K+ Secretion	0:36:55	126
	Lec 11	◆ Corticopapillary osmotic gradient high ADH ◆ Countercurrent multiplication in the loop of Henle ◆ Aquarins ◆ Vasa recta ◆ Thich ascending limb of the loop of Henle - high ADH ◆ Effects of ADH on the Na+/K+/2Cl- ◆ Effects of furosemide on Na+/K+/2Cl- ◆ Early distaltubule - high ADH ◆ Late distal tubule - high ADH ◆ Collecting ducts - high ADH ◆ Production of dilute urine ◆ Proximal tubule - no ADH ◆ Late distal tubule and collecting ducts - no ADH ◆ Free-water clearance (CH2O) ◆ (CH2O) (Free-water clearance) is negative ◆ Calculation of CH2O ◆ Urine that is isosmotic to plasma (isosthenuric) ◆ Urine that is hyposmotic to plasma (low ADH) ◆ Urine that is hyperosmotic to plasma (high ADH) ◆ Summary of ADH Pathophysiology	0:47:17	161

Subject Name	Lecture Number	Lecture Content	Lecture Duration	File Size
PHYSIOLOGY	***Lec 12***	◆ Step 1:- Na+ is transported out (Na+/K+/2Cl- pump) ◆ Acid-Base Balance Acid production ◆ Buffers ◆ Extracellular buffers ◆ Intracellular buffers ◆ Using the Henderson-Hasselbalch equation to calculate pH	0:40:53	140
	Lec 13	◆ Titration curves ◆ Reabsorption of filtered HCO3- ◆ Regulation of reabsorption of filtered HCO3- ◆ Physiologic basis for the renal compensation for respiratory acidosis ◆ Excretion of fixed H+ ◆ Excretion of H+ as titratable acid (H2PO4-) ◆ Excretion of H+ as NH4+ ◆ What is Renal Tubular Acidosis? ◆ General Principles	0:32:51	112
	Lec 14	◆ Renal Tubular Acidosis ◆ General Principles ◆ Proximal Tubular Physiology ◆ Schematic Representation of Ammonia ◆ Recycling within the renal medulla ◆ Collecting Tubule Physiology	0:31:19	107
	Lec 15	◆ Collecting Tubule Physiology ◆ Types of RTA ◆ Proximal RTA ◆ Differential Diagnosis of pRTA Conducted ◆ Distal RTA ◆ Differential Diagnosis of dRTA	0:28:18	97
	Lec 16	◆ Differenctial Diagnosis of dRTA Secretory dRTA ◆ Distal RTA ◆ Type IV RTA ◆ Metabolic acidosis Normal Anion GAP ◆ Urinary Anion Gap=(UA-UC)=[Na+]+[K+]-[Cl-] ◆ Osmolar Gap ◆ Calculated Osmolarity	0:43:21	148
	Lec 17	◆ Calculated Osmolarity ◆ Metabolic acidosis ◆ Lactic acidosis ◆ Type A (Tissue hypoxia apparent or probable) ◆ Type B (Tissue hypoxia not apparent or unlikely) ◆ Calculation : AG (mEq/L)	0:38:01	130
	Lec 18	◆ Metabolic Acidosis increased Anion GAP ◆ Respiratory alkalosis ◆ Chronic respiratory alkalosis ◆ Calculating Compensatory Responses to Simple Disorders	0:36:34	125

Subject Name	Lecture Number	Lecture Content	Lecture Duration	File Size
PHYSIOLOGY	***Lec 19***	◆ Metabolic alkalosis ◆ Renal correction of metabolic alkalosis ◆ Respiratory acidosis ◆ Adult respiratory distress syndrome COPD ◆ In Chronic respiratory acidosis ◆ Diuretics	0:31:15	107
Gastrointestinal Physiology	***Lec 01***	◆ Structure of the gastrointestinal (GI) tract ◆ Epithelial cells ◆ Muscularis mucosa ◆ Circular muscle ◆ Longitudinal muscle ◆ Submucosal plexus (Meissner's plexus) and myenteric plexus ◆ Innervation of the GI tract ◆ Innervation of the GI tract by intrinsic and extrinsic sensory neurons ◆ Overall effects of PS stimulation ◆ SOURCES Sympathetic nervous system ◆ Regulatory Substances in the Gastrointestinal Tract	0:40:33	138
	Lec 02	◆ Gastrin ◆ Actions of gastrin ◆ Stimuli for secretion of gastrin ◆ Inhibition of gastrin secretion ◆ Zollinger-Ellison syndrome (gastrinoma) ◆ CCK ◆ Actions of CCK ◆ Stimuli for the release of CCK ◆ Secretin ◆ GIP ◆ Somatostatin ◆ Histamine ◆ Neurocrines	0:40:37	139
	Lec 03	◆ VIP ◆ GRP (bombesin) ◆ Enkephalins (met -enkephalin and leu-enkephalin) ◆ Gastrointestinal Motility ◆ Segmentation Phasic Contractions ◆ Peristalsis ◆ Mechanism of slow wave production ◆ Frequency of slow waves ◆ Chewing, swallowing, and esophageal peristalsis ◆ Esophageal motility ◆ Upper one third ◆ Sequence of events occurs as food moves into and down the esophagus ◆ A Secondary peristaltic contraction	0:39:29	134

Subject Name	Lecture Number	Lecture Content	Lecture Duration	File Size
PHYSIOLOGY	***Lec 04***	◆ Esophageal Motility: Hormonal Influences ◆ Clinical correlations of esophageal motility Gastric reflux (heartburn) ◆ Gastric motility ◆ Gastric emptying ◆ Small intestinal motility ◆ Enteric Reflex ◆ Secretory Reflex ◆ Gastro-enteric reflex ◆ Gastric-ileal reflex ◆ Gastro and deuodeno colic reflexes ◆ Ileo-gastric reflex ◆ Intestino-interstinal reflex ◆ Haustra ◆ Cecum and proximal colon ◆ Rectum, anal canal, and defection ◆ Disorder of large intestinal motility ◆ Megacolon (Hirschprung's disease) ◆ Vomiting	0:31:12	106
	Lec 05	◆ Gastrointestinal Secretion Salivary secretion ◆ Composition of Saliva ◆ The Composition of saliva varies with the salivary flow rate ◆ Formation of saliva ◆ Sjogren-Xerostomia Reduced salivary flow rate ◆ Saliva production, Gastric secretion ◆ Mechanism of gastric H+ secretion ◆ Gastric Cells Types and their Secretions ◆ Vagotomy ◆ Gastrin ◆ Potentiating effects of Ach, histamine, and gastrin on H+ secretion ◆ Histamine ◆ Inhibition of gastric H+ secretion Negative feedback ◆ Duodenal ulcers ◆ Zollinger - Ellison syndrome	0:45:00	154
	Lec 06	◆ Cimetidline, Pancreatic secretion ◆ Composition of pancreatic secretion ◆ Ductal cells ◆ Stimulation of pancreatic secretion ◆ CCK ◆ Ach (via vagovagal reflexes) ◆ Summary of Gastrointestinal (GI) ◆ Bile secretion and gallbladder function Composition and function of bile ◆ Formation of bile,Cholertic agents,Primary bile acids ◆ Contraction of the gallbladder CCK ◆ Digestion and Absorption,Maltase ◆ Absorption of carbohydrates Glucose and galactose,Lactose intolerance ◆ Clinical disorders of carbohydrate absorption ◆ Digestion of proteins,c.Pepsin	0:43:10	147
	Lec 07		0:19:21	66

Subject Name	Lecture Number	Lecture Content	Lecture Duration	File Size
PHYSIOLOGY Cell Physiology	***Lec 01***	◆ Cell membrances ◆ Lipid-soluble substances ◆ Water-soluble substances ◆ Proteins ◆ Integral proteins ◆ Peripheral proteins ◆ Intercellular connections Tight junctions (zonula occuludens) ◆ Gap junction ◆ Transport Across Cell Membranes ◆ Sample calculation for diffusion ◆ Permeability ◆ Factors that increase permeability ◆ Characteristics of Different Types of Transport ◆ Carrier-mediated transport ◆ Stereospecificity ◆ Saturation ◆ Transport maximum (Tmax) ◆ Facilitated diffusion Characteristics of faciliated diffusion ◆ Example of facilitated diffusion	0:38:33	132
	Lec 02	◆ Example of facilitated diffusion ◆ ATP-binding cassette (ABC) system of transport ◆ Primary active transport *characteristics of primary active transport ◆ Examples of primary active transport ◆ Ca2+-ATPase (or Ca2+ pump) ◆ H+, K+, - ATPase (or proton pump) ◆ Secondary active transport *characteristics of secondary active transport ◆ Na+ --glucose contransport ◆ Na+ -K+ --2CL -contransport ◆ Example of Na+ - glucose contransport ◆ Example of Na+ - Ca2+ countransport or exchange ◆ Isotonic solution ◆ Hypertonic solution ◆ Hypotonic solution ◆ Osmosis ◆ Osmolarity ◆ Calculating osmotic pressure (van't Hoff's law) ◆ Reflection coefficient ◆ Diffusion Potential ◆ Ion channels ◆ Ion channels are selective ◆ Ion channels may be open or closed ◆ Voltage-gated channels ◆ Ligand-gated channels	0:44:21	151

Subject Name	Lecture Number	Lecture Content	Lecture Duration	File Size
PHYSIOLOGY	***Lec 03***	◆ Diffusion and equilibrium potentials ◆ Examples of a Na+ diffusion potential ◆ Na+ equilibrium potential ◆ Example of a Cl- diffusion potential ◆ Cl- equilibrium potential ◆ Using the Nernst equation to calculate equilibrium potentials ◆ Sample calculation with the Nernst equation ◆ Resting membrane potential ◆ Action potentials Depolarization ◆ Action potential (Threshold)	0:27:00	93
	Lec 04	◆ Ionic basis of the nerve action potential ◆ Repolarization of the action potential ◆ Refractory periods Absolute refractory period ◆ Relative refractory period ◆ Accommodation ◆ Propagation of action potentials ◆ Neuromuscular and Synaptic Transmission General ◆ Neuromuscular junction ◆ Deplorization of the presynaptic presynaptic terminal and Ca2+ uptake ◆ Agents Affecting Neuromuscular Transmission ◆ Disease-myasthenia gravis	0:41:42	142
	Lec 05	◆ Disease-myasthenia gravis ◆ Synaptic transmission One-to-one synapses ◆ Many-to-one synapses ◆ Excitatory neurotransmitters ◆ Summation at synapses ◆ Ficilitation, argumentation, and post-tetanic potentiation ◆ Glutamate Receptor types ◆ NMDA receptor properties ◆ Ionotropic synapse: ◆ Metabotropic synapse ◆ Neurotransmitters: Ach, Norepinephrine, epinephrine ◆ dopamine	0:34:28	118
	Lec 06	◆ Metabolites ◆ Histamine,GABA,Glycine,Skeltal Muscle ◆ Thick filaments,Thin filaments,Troponin ◆ Summary of Events in Muscle Contraction and Relaxation,Titin,T tubules	0:43:26	148
	Lec 07	◆ SR internal tubular structure ◆ Junctophilins (JP) ◆ Calsequestrin (CSQ) ◆ Mechanism of tetanus ◆ Length-tension relationship ◆ Force-velocity curve ◆ Isometric Contractions ◆ Active tension,Depolarisation ◆ Force-velocity relationship ◆ Types of smooth muscle	0:36:06	123