**Processes of Science Text Chapter(s) \_\_\_\_\_\_\_\_**

***Vocabulary***

conclusion, control, control group, controlled variable, dependent variable, electron micrograph,

experimental group, experimental variable, independent variable, reliable, repeatable procedure, sample size, scientific method, testable hypothesis

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| A1 demonstrate safe and correct  technique for a variety of  laboratory procedures | demonstrate the correct use of a dissection microscope  demonstrate safe and correct dissection technique  demonstrate the correct use of a compound microscope |
| A2 design an experiment using  the scientific method | formulate a testable hypothesis to investigate a scientific problem  (e.g., factors affecting enzyme activity, tonicity of various cells)  formulate and carry out a repeatable, controlled procedure to test  the hypothesis:  – identify controlled versus experimental variables  – identify the independent and dependent variables  – use control and experimental groups, as appropriate  – use a control as appropriate  – use appropriate sample size  observe, measure, and record data  interpret results to draw conclusions  determine whether the conclusions support or reject  the hypothesis  determine whether the experiment is reliable  use information and conclusions as a basis for further  comparisons, investigations, or analyses |
| A3 interpret data from a variety  of text and visual sources | use data from a variety of representations (e.g., diagrams, electron micrographs, graphs, photographs) to make inferences and generalizations  draw and present conclusions, applying the most appropriate means to communicate (e.g., graph, diagram, model, formula, map, visual) |

**Cell Biology (Cell Structure) Text Chapter(s) \_\_\_\_\_\_\_\_**

***Vocabulary***

cell membrane, cell wall, cellular respiration, chloroplast, chromatin, chromosome, cristae, cytoplasm, cytoskeleton, Golgi bodies, lysosome, matrix, mitochondria, nuclear envelope, nuclear pore, nucleolus, nucleus, organelle, polysome, ribosome, rough endoplasmic reticulum, smooth endoplasmic reticulum, vacuole, vesicle

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| B1 analyse the functional interrelationships  of cell structures | describe the following cell structures and their functions:  – cell membrane  – cell wall  – chloroplast  – cytoskeleton  – cytoplasm  – Golgi bodies  – lysosomes  – mitochondria (including cristae and matrix)  – nucleus (including nuclear pore, nucleolus, chromatin, nuclear envelope, and chromosomes)  – ribosomes (polysomes)  – smooth and rough endoplasmic reticulum  – vacuoles  – vesicles  state the balanced chemical equation for cellular respiration  describe how the following organelles function to compartmentalize the cell and move materials through it:  – rough and smooth endoplasmic reticulum  – vesicles  – Golgi bodies  – cell membrane  identify cell structures depicted in diagrams and electron micrographs |

**Cell Biology (Cell Compounds and Biological Molecules)**

**Text Chapter(s) \_\_\_\_\_\_\_\_**

***Vocabulary***

acid, acid (carboxyl) group, adenine, adenosine triphosphate (ATP), alpha helix, amine group, amino acid, base, beta pleated sheet, bonding, buffer, carbohydrate, cellulose, complementary base pairing, cytosine, dehydration synthesis, deoxyribonucleic acid (DNA), deoxyribose, dipeptide, disaccharide, double helix, glucose, glycerol, guanine, glycogen, hemoglobin, hydrogen bonding, hydrolysis, lipid, lubricant, maltose, monomer, monosaccharide, neutral fat, nitrogenous base, nucleic acids, nucleotide, organic, peptide bond, pH, phosphate, phospholipid, polarity, polymer, polypeptide, polysaccharide, primary structure, protein, quaternary structure, R-group, ribonucleic acid (RNA), ribose, saturated fatty acid, secondary structure, solvent, starch, steroid, sugar-phosphate backbone, temperature regulator, tertiary structure, thymine,

unsaturated fatty acid, uracil

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| B2 describe the characteristics  of water and its role in  biological systems | describe the role of water as a solvent, temperature regulator,  and lubricant  describe how the polarity of the water molecule results in  hydrogen bonding |
| B3 describe the role of acids, bases, and buffers in biological systems in  the human body | differentiate among acids, bases, and buffers  describe the importance of pH to biological systems in the  human body |
| B4 analyse the structure and function of biological molecules in living systems,including  – carbohydrates  – lipids  – proteins  – nucleic acids | demonstrate a knowledge of dehydration synthesis and  hydrolysis as applied to organic monomers and polymers  differentiate among carbohydrates, lipids, proteins, and nucleic acids with respect to chemical structure  recognize the following molecules in structural diagrams:  – adenosine triphosphate (ATP)  – deoxyribonucleic acid (DNA)  – disaccharide  – glucose  – glycerol  – hemoglobin  – monosaccharide  – neutral fat  – phospholipid  – polysaccharide (starch, glycogen, and cellulose)  – ribose  – RNA  – saturated and unsaturated fatty acids  – steroids  recognize the empirical formula of a monosaccharide as CnH2nOn  list the main functions of carbohydrates  differentiate among monosaccharides (e.g., glucose),  disaccharides (e.g., maltose), and polysaccharides  differentiate among starch, cellulose, and glycogen with respect to  – function  – type of bonding  – level of branching  describe the location, structure, and function of the following in the human body:  – neutral fats  – steroids  – phospholipids  compare saturated and unsaturated fatty acids in terms of  molecular structure  list the major functions of proteins  draw a generalized amino acid and identify the amine, acid  (carboxyl), and R-groups  identify the peptide bonds in dipeptides and polypeptides  differentiate among the following levels of protein organization with respect to structure and types of bonding:  – primary – secondary (alpha helix, beta pleated sheet)  – tertiary – quaternary (e.g., hemoglobin)  list the major functions of nucleic acids (RNA and DNA)  name the four nitrogenous bases in ribonucleic acid (RNA) and describe the structure of RNA using the following terms:  – nucleotide (ribose, phosphate, nitrogenous base, adenine,  uracil, cytosine, guanine)  – linear, single stranded  – sugar-phosphate backbone  name the four nitrogenous bases in DNA and describe the  structure of DNA using the following terms:  – nucleotide (deoxyribose, phosphate, nitrogenous base,  adenine, thymine, cytosine, guanine)  – complementary base pairing – double helix  – hydrogen bonding – sugar-phosphate backbone  compare the general structural composition of DNA and RNA  relate the general structure of the ATP molecule to its role as the“energy currency” of cells |

**Cell Biology (DNA Replication) Text Chapter(s) \_\_\_\_\_\_\_\_**

***Vocabulary***

complementary base pairing, DNA helicase, DNA polymerase, nucleotides, recombinant DNA, replication, semi-conservative replication

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| B5 describe DNA replication | describe the three steps in the semi–conservative replication of  DNA:  – “unzipping” (DNA helicase)  – complementary base pairing (DNA polymerase)  – joining of adjacent nucleotides (DNA polymerase)  describe the purpose of DNA replication  identify the site of DNA replication within the cell |
| B6 describe recombinant DNA | define recombinant DNA  describe a minimum of three uses for recombinant DNA |

**Cell Biology (Protein Synthesis) Text Chapter(s) \_\_\_\_\_\_\_\_**

***Vocabulary***

amino acid, anti-codon, codon, DNA sequence (genetic code), elongation, environmental mutagen, genetic disorder, initiation, messenger RNA (mRNA), mutation, polypeptide chain, ribosomes, termination, transcription, transfer RNA (tRNA), translation

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| B7 demonstrate an  understanding of the process  of protein synthesis | identify the roles of DNA, messenger RNA (mRNA), transfer RNA (tRNA), and ribosomes in the processes of transcription and translation, including initiation, elongation, and termination  determine the sequence of amino acids coded for by a specific DNA sequence (genetic code), given a table of mRNA codons  identify the complementary nature of the mRNA codon and the tRNA anti-codon |
| B8 explain how mutations in  DNA affect protein synthesis | give examples of two environmental mutagens that can cause mutations in humans  use examples to explain how mutations in DNA change the sequence of amino acids in a polypeptide chain, and as a result may lead to genetic disorders |

**Cell Biology (Transport Across Cell Membrane) Text Chapter(s) \_\_\_\_\_\_\_\_**

***Vocabulary***

active transport, carbohydrates, carrier protein, cell membrane, channel protein, cholesterol, concentration gradient, diffusion, endocytosis, exocytosis, facilitated transport, fluid-mosaic membrane model, glycolipid, glycoprotein, hydrophilic, hydrophobic, hypertonic, hypotonic, isotonic, osmosis, passive transport processes, phagocytosis, phospholipid, phospholipid bilayer, pinocytosis, pressure gradient, protein, selectively permeable, surface area-to-volume ratio, tonicity

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| B9 analyse the structure and  function of the cell membrane | apply knowledge of organic molecules – including  phospholipids, proteins, glycoproteins, glycolipids,  carbohydrates, and cholesterol – to explain the structure and  function of the fluid-mosaic membrane model  identify the hydrophobic and hydrophilic regions of the  phospholipid bilayer  explain why the cell membrane is described as “selectively permeable”  describe passive transport processes including diffusion, osmosis, and facilitated transport  explain factors that affect the rate of diffusion across a cell membrane (e.g., temperature, size of molecule, charge of  molecule, concentration gradient, pressure gradient)  predict the effects of hypertonic, isotonic, and hypotonic  environments on osmosis in animal cells  describe active transport processes including active transport, endocytosis (phagocytosis and pinocytosis), and exocytosis  compare specific transport processes (including diffusion, osmosis, facilitated transport, active transport, endocytosis, and exocytosis) in terms of  – concentration gradient  – use of channel or carrier protein  – use of energy  – types/sizes of molecules transported  devise an experiment using the scientific method (e.g., to  investigate the tonicity of cells) |
| B10 explain why cells divide  when they reach a particular  surface area-to-volume ratio | differentiate between cells that have a high or low surface  area-to-volume ratio  demonstrate an understanding of the significance of surface area-to-volume ratio in cell size |

**Cell Biology (Enzymes) Text Chapter(s) \_\_\_\_\_\_\_\_**

***Vocabulary***

activation energy, biochemical reaction, coenzyme, competitive inhibitor, enzyme, enzyme activity, enzyme concentration, heavy metal, induced fit model, metabolism, non-competitive inhibitor, pH, proteins, substrate, substrate concentration, thyroid, thyroxin, vitamins

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| B11 analyse the roles of enzymes  in biochemical reactions | explain the following terms: metabolism, enzyme, substrate, coenzyme, activation energy  use graphs to identify the role of enzymes in lowering the activation energy of a biochemical reaction  explain models of enzymatic action (e.g., induced fit)  differentiate between the roles of enzymes and coenzymes in biochemical reactions  identify the role of vitamins as coenzymes  apply knowledge of proteins to explain the effects on enzyme activity of pH, temperature, substrate concentration, enzyme concentration, competitive inhibitors, and non-competitive inhibitors including heavy metals  devise an experiment using the scientific method (e.g., to investigate the activity of enzymes)  identify the thyroid as the source gland for thyroxin, and relate the function of thyroxin to metabolism |

**Human Biology (Digestive System) Text Chapter(s) \_\_\_\_\_**

***Vocabulary***

absorption, anaerobic bacteria, anus, appendix, bile, capillary, cardiac sphincter, chemical digestion, digestive enzyme, digestive tract, duodenum, emulsification, epiglottis, esophagus, gall bladder, gastric juice, hydrochloric acid (HCl), insulin, intestinal juice, lacteals, large intestine (colon), lipase, liver, maltase, microvillus, nuclease, pancreas, pancreatic amylase, pancreatic juice, pepsin, pepsinogen, peptidase, peristalsis, pH, pharynx, physical digestion, protease, pyloric sphincter, rectum, salivary amylase, salivary gland, salivary juice/saliva, small intestine, sodium bicarbonate, stomach, swallowing, trypsin, villus

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| C1 analyse the functional interrelationships  of the structures  of the digestive system | identify and give a function for each of the following:  – mouth – tongue – teeth  – salivary glands – pharynx – epiglottis  – esophagus – cardiac sphincter – stomach  – pyloric sphincter – duodenum – liver  – gall bladder – pancreas – small intestine  – appendix – large intestine (colon)  – rectum – anus  describe swallowing and peristalsis  identify the pancreas as the source gland for insulin, and describe the function of insulin in maintaining blood sugar levels  list at least six major functions of the liver  explain the role of bile in the emulsification of fats  describe how the small intestine is specialized for chemical and physical digestion and absorption  describe the structure of the villus, including mircovilli, and explain the functions of the capillaries and lacteals within it  describe the functions of anaerobic bacteria in the colon  demonstrate the correct use of the dissection microscope to examine the various structures of the digestive system |
| C2 describe the components, pH, and digestive actions of  salivary, gastric, pancreatic,  and intestinal juices | relate the following digestive enzymes to their glandular sources and describe the digestive reactions they promote:  – salivary amylase – pancreatic amylase  – lipase – peptidase  – maltase – nuclease  – proteases (pepsinogen, pepsin, trypsin)  describe the role of water as a component of digestive juices  describe the role of sodium bicarbonate in pancreatic juice  describe the role of hydrochloric acid (HCl) in gastric juice  describe the role of mucus in gastric juice  describe the importance of the pH level in various regions of  the digestive tract |

**Human Biology (Circulatory System) Text Chapter(s) \_\_\_\_\_\_\_**

***Vocabulary***

anterior vena cava, antibody, antigen, aorta, arterial duct atrioventricular valve, autonomic nervous system, atrioventricular (AV) node, blood, blood pressure, blood velocity, blood vessel, capillary-tissue fluid exchange, carotid artery, chordae tendineae, coronary artery, coronary vein, diastolic pressure, fetal circulation, heart rate, hepatic portal vein, hepatic vein, hypertension, hypotension, iliac artery, iliac vein, jugular vein, left atrium, left ventricle, lymph capillaries, lymph node, lymphatic system, lymphatic veins, mesenteric artery, oval opening, plasma, platelets, posterior vena cava, pulmonary arteries, pulmonary circulation, pulmonary trunk, pulmonary veins, Purkinje fibres, red blood cell, renal artery, renal vein, right atrium, right ventricle, sinoatrial (SA) node, semi-lunar valve, septum, subclavian artery, subclavian vein, systemic circulation, systolic pressure, total cross-sectional area, umbilical artery, umbilical vein, valve, veins, venous duct, vessel wall, white blood cell

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| C3 describe the interrelationships  of the structures  the heart | identify and give functions (including where blood is coming from and going to, as applicable) for each of the following:  – left and right atria – left and right ventricles  – coronary arteries and veins – anterior and posterior vena cava  – aorta – pulmonary arteries and veins  – pulmonary trunk – atrioventricular valves  – chordae tendineae – semi-lunar valves  – septum  recognize heart structures using both internal and external  diagram views |
| C4 analyse the relationship  between heart rate and blood  pressure | describe the location and functions of the sinoatrial (SA) node, atrioventricular (AV) node, and Purkinje fibres  describe how the autonomic nervous system increases and  decreases heart rate and blood pressure  differentiate between systolic and diastolic pressures  describe hypertension and hypotension and their causes  demonstrate the measurement of blood pressure |
| C5 analyse the functional interrelationships  of the vessels of  the circulatory system | identify and give the function (including where the vessel is carrying blood from and where it is carrying blood to) of each of the following:  – subclavian arteries and veins – jugular veins  – carotid arteries – mesenteric arteries  – anterior and posterior vena cava  – pulmonary veins and arteries  – hepatic vein – hepatic portal vein  – renal arteries and veins – iliac arteries and veins  – coronary arteries and veins – aorta  describe and differentiate among the five types of blood vessels with reference to characteristics such as  – structure and thickness of vessel walls  – presence of valves  – direction of blood flow (toward or away from the heart)  differentiate between pulmonary and systemic circulation with respect to oxygenation or deoxygenation of blood in the vessels involved  demonstrate a knowledge of the path of a blood cell from the aorta through the body and back to the left ventricle  relate blood pressure and blood velocity to the total crosssectional area of the five types of blood vessels  describe capillary-tissue fluid exchange  identify and describe differences in structure and circulation between fetal and adult systems, with reference to umbilical vein and arteries, oval opening, venous duct, arterial duct |
| C6 describe the components  of blood | describe the shape, function, and origin of red blood cells, white blood cells, and platelets  list the major components of plasma  explain the roles of antigens and antibodies |
| C7 describe the interrelationships  of the structures  of the lymphatic system | describe the functions of the lymphatic system  identify and give functions of lymph capillaries, veins, and nodes |

**Human Biology (Respiratory System) Text Chapter(s) \_\_\_\_**

***Vocabulary***

alveoli, aortic bodies, bicarbonate ions, bronchi, bronchioles, carbaminohemoglobin, carbon dioxide, carbonic anhydrase, carotid bodies, cilia, diaphragm, exhalation, external respiration, hydrogen ions, inhalation, intercostal (rib) muscles, internal respiration, larynx, lungs, mucus, nasal cavity, oxygen, oxyhemoglobin, pH, pharynx, pleural membrane, reduced hemoglobin, respiratory centre in the medulla oblongata, respiratory tract, ribs, stretch receptors, thoracic cavity, trachea

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| C8 analyse the functional interrelationships  of the structures  of the respiratory system | identify and give functions for each of the following:  – nasal cavity – pharynx – larynx  – trachea – bronchi – bronchioles  – alveoli – diaphragm and ribs  – pleural membranes – thoracic cavity  explain the roles of cilia and mucus in the respiratory tract  explain the relationship between the structure and function  of alveoli |
| C9 analyse the processes  of breathing | describe the interactions of the following structures in the  breathing process:  – respiratory centre in the medulla oblongata  – lungs  – pleural membranes  – diaphragm  – intercostal (rib) muscles  – stretch receptors  compare the processes of inhalation and exhalation  explain the roles of carbon dioxide and hydrogen ions in  stimulating the respiratory centre in the medulla oblongata  explain the roles of oxygen, carbon dioxide, and hydrogen ions in stimulating carotid and aortic bodies |
| C10 analyse internal and  external respiration | describe the exchange of carbon dioxide and oxygen during  internal and external respiration, including  – location of exchange  – conditions that favour exchange (e.g., pH, temperature)  explain the roles of oxyhemoglobin, carbaminohemoglobin,  reduced hemoglobin, bicarbonate ions, and carbonic anhydrase  in the transport of carbon dioxide and oxygen in the blood  write the chemical equations for internal and external respiration |

**Human Biology (Nervous System) Text Chapter(s) \_\_\_\_\_\_\_\_\_**

***Vocabulary***

acetylcholine (ACh), acetylcholinesterase (AChE), action potential, adrenal medulla, adrenalin, “all-ornone” response, autonomic nervous system, axomembrane, axon, axoplasm, calcium ion, cell body, central nervous system, cerebellum, cerebrum, contractile protein, corpus callosum, dendrite, depolarization, effector, excitatory neurotransmitter, hypothalamus, impulse, inhibitory neurotransmitter, interneuron, medulla oblongata, meninges, motor neuron, myelin sheath, myelinated nerve fibre, neuroendocrine control centre, neuron, neurotransmitters, node of Ranvier, norepinephrine, parasympathetic division, peripheral nervous system, pituitary gland, polarity, postsynaptic membrane, potassium gate, presynaptic membrane, receptor, reflex arc, refractory period, repolarization, resting potential, saltatory transmission, Schwann cell, sensory neuron, sodium gate, sodium-potassium pump, somatic nervous system, sympathetic division, synapse, synaptic cleft, synaptic ending, synaptic vesicle, thalamus, threshold value

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| C11 analyse the transmission of  nerve impulses | identify and give functions for each of the following: dendrite,  cell body, axon, axoplasm, and axomembrane  differentiate among sensory, motor, and interneurons with  respect to structure and function  explain the transmission of a nerve impulse through a neuron,  using the following terms:  – resting and action potential  – depolarization and repolarization  – refractory period  – sodium and potassium gates  – sodium-potassium pump  – threshold value  – “all-or-none” response  – polarity  relate the structure of a myelinated nerve fibre to the speed of impulse conduction, with reference to myelin sheath, Schwann cell, node of Ranvier, and saltatory transmission  identify the major components of a synapse, including  – synaptic ending  – presynaptic and postsynaptic membranes  – synaptic cleft  – synaptic vesicle  – calcium ions and contractile proteins  – excitatory and inhibitory neurotransmitters  (e.g.norepinephrine, acetylcholine – ACh)  – receptor  – acetylcholinesterase (AChE)  explain the process by which impulses travel across a synapse  describe how neurotransmitters are broken down in the synaptic  cleft  describe the structure of a reflex arc (receptor, sensory neuron,  interneuron, motor neuron, and effector) and relate its structure to how it functions |
| C12 analyse the functional interrelationships  of the divisions  of the nervous system | compare the locations and functions of the central and peripheral  nervous systems  identify and give functions for each of the following parts of  the brain:  – medulla oblongata  – cerebrum  – thalamus  – cerebellum  – hypothalamus  – pituitary gland  – corpus callosum  – meninges  explain how the hypothalamus and pituitary gland interact as the  neuroendocrine control centre  differentiate between the functions of the autonomic and somatic  nervous systems  describe the inter-related functions of the sympathetic and  parasympathetic divisions of the autonomic nervous system,  with reference to  – effect on body functions including heart rate, breathing rate, pupil size, digestion  – neurotransmitters involved  – overall response (“fight or flight” or relaxed state)  identify the source gland for adrenalin (adrenal medulla) and  explain its role in the “fight or flight” response |

**Human Biology (Reproductive System) Text Chapter(s) \_\_\_\_\_\_\_**

***Vocabulary***

acrosome, anterior pituitary, cervix, clitoris, corpus luteum, Cowper’s glands, ductus (vas) deferens, endometrium, epididymis, estrogen, follicles, follicle-stimulating hormone (FSH), follicular phase, gonadotropin-releasing hormone (GnRH), head, homeostatic regulation, human chorionic gonadotropin (HCG), hypothalamus, implantation, interstitial cells, luteal phase, luteinizing hormone (LH), menstruation, midpiece, ovarian cycle, ovaries, oviducts (fallopian tubes), ovulation, oxytocin, penis, positive feedback mechanism, progesterone, proliferative phase, prostate gland, scrotum, secretory phase, seminal fluid, seminal vesicles, seminiferous tubules, sperm, tail (flagellum), testes, testosterone, urethra, urethral opening, uterine cycle, uterus, vagina

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| C14 analyse the functional interrelationships  of the structures  of the male reproductive  system | identify and give functions for each of the following:  – testes (seminiferous tubules and interstitial cells) – scrotum – epididymis – ductus (vas) deferens – prostate gland – Cowper’s glands – seminal vesicles – penis – urethra  describe the path of sperm from the seminiferous tubules to the urethral opening  list the components seminal fluid (as contributed by the Cowper’s glands, prostate gland, and seminal vesicles), and describe the functions of each component  identify the tail (flagellum), midpiece, head, and acrosome of a mature sperm and state their functions  describe the functions of testosterone  describe the homeostatic regulation of testosterone levels by the hypothalamus, anterior pituitary, and testes |
| C15 analyse the functional interrelationships  of the structures  of the female reproductive  system | identify and give functions for each of the following:  – ovaries (follicles and corpus luteum) – oviducts (fallopian tubes) – uterus – cervix – endometrium – vagina – clitoris  describe the functions of estrogen  describe the sequence of events in the ovarian cycle, with reference the follicular phase, ovulation, and the luteal phase  describe the sequence of events in the uterine cycle, with reference to menstruation, the proliferative phase, and the secretory phase  describe the control of the ovarian and uterine cycles by hormones including gonadotropin-releasing hormone (GnRH), follicle-stimulating hormone (FSH), luteinizing hormone (LH), estrogen, and progesterone  describe the hormonal changes that occur as a result of  implantation, including  – production of human chorionic gonadotropin (HCG) to  maintain the corpus luteum  – increased production of progesterone by the corpus luteum  describe a positive feedback mechanism involving oxytocin |

**Human Biology (Urinary System) Text Chapter(s) \_\_\_\_\_\_\_\_**

***Vocabulary***

antidiuretic hormone (ADH), adrenal cortex, afferent and efferent arterioles, aldosterone, ammonia, Bowman’s capsule, collecting duct, glomerulus, glucose, homeostasis, hypothalamus, kidney, loop of Henle, metabolic waste, nephron, nitrogenous waste, osmotic gradient, peritubular capillary network, pH, posterior pituitary, pressure filtration, proximal and distal convoluted tubules, reabsorption of water, renal artery, renal cortex, renal medulla, renal pelvis, renal vein, selective reabsorption, tubular excretion, urea, ureter, urethra, urinary bladder, urine

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| C13 analyse the functional interrelationships  of the structures  of the urinary system | identify and explain the functions of each of the following:  – kidney  – ureter  – urethra  – urinary bladder  – renal cortex  – renal medulla  – renal pelvis  – nephron  identify and explain the functions of the following components of the nephron:  – glomerulus  – Bowman’s capsule  – afferent and efferent arterioles  – peritubular capillary network  – proximal and distal convoluted tubules  – collecting duct  – loop of Henle  describe the production of urine with reference to the following terms:  – pressure filtration  – selective reabsorption  – reabsorption of water following an osmotic gradient  – tubular excretion  – metabolic waste (e.g., nitrogenous waste, urea, ammonia)  describe how the kidneys maintain blood pH  compare urea and glucose content of blood in the renal artery  with that of the renal vein  identify the source glands for antidiuretic hormone (ADH) and aldosterone  describe how the hypothalamus, posterior pituitary, ADH, and  the nephron achieve homeostasis of water levels in the blood  describe how the adrenal cortex, aldosterone, and the nephron  achieve homeostasis of water and sodium levels in the blood |