

Form 4 BIOLOGY MEANINGS

CHAPTER 1: INTRODUCTION TO BIOLOGY AND LABORATORIES RULES

CHAP	TERM	MEANING	T.B.PAGE
1.1	Biology	a detailed study of living things in the natural environment	4
1.1	Botany	study of plant life	4
1.1	Physiology	study of the function and mechanisms in organisms	4
1.1	Ecology	study of the interactions between organisms and their environment	4
1.1	Microbiology	study of microorganisms	4
1.1	Genetics	study of inheritance and genetic variation	4
1.2	biohazard	Any chemical or biological agent that poses a threat or risk to humans and the environment.	311
1.3	Plane	a flat surface of a shadow passing through the body	13
1.3	Sagittal plane	divides the body into right and left parts	13
1.3	Frontal plane	divides the body into frontal and rear parts	13
1.3	Horizontal plane	divides the body into upper and lower parts	13
1.3	Cross section	divides the structure into upper and lower portions horizontally	14
1.3	Longitudinal section	divides the structure into left and right portions	14
1.3	Ventral	towards the lower part of the body	14
1.3	Dorsal	towards the upper part of the body	14
1.3	Superior	the part that is above all other parts or towards the head	14
1.3	Lateral	far from the midline or at the side of the body	14
1.3	Inferior	situated below other parts or towards the feet	14
1.3	Anterior	towards the front of the body	14
1.3	Posterior	towards the back part of the body	14

CHAPTER 2: CELL BIOLOGY AND ORGANISATION

CHAP	TERM	MEANING	T.B.PAGE
2.1	Golgi apparatus	a cellular component in the cytoplasm that processes, packs, and distributes secretory substances such as enzymes and proteins.	312
2.1	Vacuole	sacs that contain cell sap that can be found in the cytoplasm.	26/313
2.2	Unicellular organisms	made up of only one cell.	28
2.2	Pseudopodium	false feet	28
2.2	Osmoregulation	when the vacuole expands to the maximum size, contraction occurs and water is excreted from time to time	29

2.2	Conjugation	sexual reproduction occurs when environmental conditions are not suitable.	29
2.3	Tissues	are a group of cells that have the same structure and function and are arranged together to carry out a specific function.	32
2.3	Epithelial tissue	tissues that cover the outer surface (skin) and hollow surfaces in the body (digestive tract and respiratory tract)	32
2.3	skeletal muscle	muscles that connect a bone to another bone. the movement of the skeleton relies on the contraction of skeletal muscles.	33/313
2.3	smooth muscle	non-striated muscles that can be found in intestinal walls and blood vessels.	33/313
2.3	Phloem	the vascular tissue that is involved in the transport of food materials from the site of photosynthesis to other parts that need them.	313
2.3	Tay-Sachs	a hereditary disease caused by the failure of enzymes to produce in the lysosomes.	37
2.4	Organ	a group of different tissue	37

CHAPTER 3: MOVEMENT OF SUBSTANCES ACROSS A PLASMA MEMBRANE

CHAP	TERM	MEANING	T.B.PAGE
3.1	Polar head/Hydrophilic	attracted to water	47
3.1	Nonpolar tail/Hydrophobic	repels water	47
3.1	Channel proteins	the protein molecules with channels or canals	47
3.1	Carrier proteins	protein molecules that function as carriers	47
3.1	Selectively permeable membrane	only allows the free movement of certain molecules across it preventsvenlimitslimit the movement of other substances.	48
3.2	Simple diffusion	the movement of molecules or ions from an area of high concentration to an area of low concentration.	53
3.2	Osmosis	1. a passive transport process that is similar to diffusion but it involves only water molecules. 2. the diffusion of water molecules from a region of higher water potential towards a region of lower water potential, across a selectively permeable membrane.	53/312
3.2	Facilitated diffusion	movement of molecules and ions across the membrane with the aid of transport proteins (carrier or channel proteins)	53
3.2	Active transport	the movement of substances across the membrane of living cells, against the concentration gradient with the help of carrier proteins and energy from ATP.	54/311

3.2	Pumps	carrier proteins involved in active transport	55
3.3	Haemolysis (animal)	cells swell and burst	58
3.3	Crenation (animal)	the shrunken state of animal cells when the surrounding solution is hypertonic towards the cytoplasm of the cells.	311
3.3	Turgid (plant)	the vacuoles expand and push the cytoplasm and plasma membrane against the cell wall.	60
3.3	Plasmolysis (plant)	the shrinking of cytoplasm from the plant cell wall as a result of water loss through osmosis.	60/313

CHAPTER 4: CHEMICAL COMPOSITIONS IN A CELL

CHAP	TERM	MEANING	T.B.PAGE
4.1	Cohesive force	water molecules that are attached to each other	72
4.1	Adhesive force	water molecules that are attached to other surfaces	72
4.2	Organic compounds	chemical compounds that contain carbon elements.	73
4.2	Monosaccharides	carbohydrate monomers, which are the simplest carbohydrate units.	73
4.2	Disaccharide molecules	formed when two simple sugar molecules (monosaccharides) combine through condensation to form a disaccharide unit.	75
4.2	Polysaccharides	sugar polymers consisting of monosaccharide monomers.	75
4.3	Protein	a complex compound composed of carbon, hydrogen, oxygen, and nitrogen elements	76
4.3	Dipeptides	composed of two amino acid molecules which are linked together by a peptide bond through the condensation process	76
4.4	Lipids	naturally occurring hydrophobic compounds found in plant and animal tissues.	77
4.4	Triglycerides	a type of ester formed from the condensation of one glycerol molecule with three molecules of fatty acids	77
4.4	Saturated fats	fatty acids with only single bonds between carbon atoms.	78
4.4	Unsaturated fats	fatty acids with at least one double bond between carbon atoms.	78
4.4	Wax	contains one molecule of alcohol that combines with another molecule of fatty acid and is waterproof	78
4.4	Phospholipids	a major component of plasma membranes and are made up of one	78

		molecule of glycerol that combines with two molecules of fatty acid and one group of phosphate	
4.4	Steroids	lipids that do not contain fatty acids	78
4.5	Nucleotide	The basic unit of DNA molecule that contains phosphate group, ribose or deoxyribose, and a nitrogenous base.	312
4.5	Nucleic acids	1. one or two polymer chains comprising nucleotide monomers 2. A complex organic compound in living cells that consists of nucleotide chains. There are two types of nucleic acid, which are DNA and RNA.	79/312
4.5	Deoxyribonucleic Acid (DNA)	1. consists of two polynucleotide chains that are intertwined in opposite directions and form the double helix 2. nucleic acid that carries the genetic codes of an organism and is the main component of chromosomes	79/311
4.5	Ribonucleic Acid (RNA)	a single polynucleotide chain which is shorter compared to DNA.	79

CHAPTER 5: METABOLISM AND ENZYMES

CHAP	TERM	MEANING	T.B.PAGE
5.1	Catabolism	the process of breaking down complex substances into simple substances.	86
5.1	Anabolism	the process of synthesising complex molecules from simple molecules	86
5.2	Enzyme	an organic catalyst that is mostly made up of proteins and is produced by living cell organisms.	86
5.2	Substrates	substances needed for an enzyme reaction.	86
5.2	Intracellular enzymes	enzymes that are synthesised in a cell for its own use	88
5.2	Extracellular enzymes	enzymes that are secreted outside the cel	88
5.2	Activation energy	the energy needed to break the bond in the substrate molecule before reaction can occur.	89
5.3	Immobilized enzymes	enzymes that combine with inert and insoluble substances to increase the resistance of enzymes towards change in factors such as ph and temperature.	95

CHAPTER 6: CELL DIVISION

CHAP	TERM	MEANING	T.B.PAGE
6	Diploid	describes two sets of chromosomes, one set from the male parent and another set from the female parent.	311
6.1	Karyokinesis	the division of the nucleus	100
6.1	Cytokinesis	the division of the cytoplasm	100
6.1	Homologous chromosomes	both paternal and maternal chromosomes have the same structural characteristics.	100
6.2	Cell cycle	the sequence of events that involves DNA multiplication and cell division to produce two daughter cells	101
6.2	Interphase	the longest phase in the cell cycle.	101
6.2	Telophase	The final stage in cell division, when the nuclear membrane envelopes the nucleus of each daughter cell.	103/313
6.2	Mitosis	1. the division of the nucleus of parent cell into two nuclei 2. The cellular division that produces two daughter cells that contain a similar number and type of chromosome as the parent cell.	103
6.2	Sister chromatids	chromosome that are made up of two identical threads	103
6.3	Meiosis	the process of cell division that occurs in reproductive organs to produce gametes that contain half the number of chromosomes (haploid) of the parent cells (diploid).	105
6.3	Bivalent/tetrad	four chromatids for each homologous chromosome	106
6.4	Trisomy 21	a down syndrome individual has 47 chromosomes, which is an extra chromosome at the 21st set.	109

CHAPTER 7: CELLULAR RESPIRATION

CHAP	TERM	MEANING	T.B.PAGE
7.1	Cellular respiration	the oxidation process of organic molecules through several stages to release energy	114
7.1	Anaerobic respiration	the complete oxidation of glucose to carbon dioxide, water, and energy by using oxygen.	311
7.2	Aerobic respiration	the incomplete oxidation of glucose without the use of oxygen or in limited oxygen supply	311

7.2	Glycolysis	the breakdown of glucose by enzymes.	115
7.3	Fermentation	the incomplete breakdown of glucose in conditions of limited oxygen or without oxygen.	114/119
7.3	Lactic acid fermentation	the breakdown of glucose into lactic acid and energy.	119

CHAPTER 8: RESPIRATORY SYSTEMS IN HUMANS AND ANIMALS

CHAP	TERM	MEANING	T.B.PAGE
8.1	Respiratory structure	the respiratory surface that enables gaseous exchange to occur between respiring organism cells and their outer environment.	128
8.2	Breathing	the repetitive inhalation and exhalation process.	132
8.3	Haemoglobin	protein in the red blood cell that functions to transport oxygen.	312
8.3	Oxyhaemoglobin	a compound that is formed when oxygen combines with haemoglobin in erythrocytes	
8.3	Carbaminohemoglobin	a compound that consists of carbon dioxide and the pigment haemoglobin in the blood	311
8.4	Emphysema	a condition where the air sacs in the lungs are damaged and cause difficulties in breathing.	311

CHAPTER 9: NUTRITION AND THE HUMAN DIGESTIVE SYSTEM

CHAP	TERM	MEANING	T.B.PAGE
9.1	Digestion	the process that breaks down large and complex pieces of food into smaller and simple pieces that can be dissolved for easy absorption.	144
9.1	bolus	the ball of chewed food that has been mixed with saliva, formed in the mouth through the action of the tongue before being swallowed.	311
9.1	Peristalsis	the rhythmic contraction and relaxation of muscles along the alimentary canal.	145
9.1	Pepsinogen	an inactive enzyme that is activated by hydrochloric acid to become pepsin.	145
9.4	Assimilation	a process that occurs in cells where nutrients are used to form complex compounds or structures of components.	153
9.4	Deamination	the removal of an amino group from an amino acid.	311
9.5	Faeces	a semisolid of remaining waste	155

9.5	Defaecation (find your own meaning)		155
9.6	A balanced diet	a diet that consists of all seven food classes (carbohydrates, lipids, proteins, vitamins, mineral salts, fibre, and water) in the correct proportion and balanced quantity according to individual needs so that optimal health can be maintained.	156
9.6	Energy value	the total amount of energy released when one gram of food is oxidised completely.	156
9.6	Obesity	caused by the storage of excess fats as a result of imbalanced food intake and use of energy.	160
9.7	Gastric bypass	a reduction of the stomach size using various methods of surgery.	161
9.7	Gastritis	the inflammation and corrosion of the stomach epithelial layer by gastric juice when there is no food in the stomach.	162
9.7	Anorexia nervosa	individuals who are obsessed with their body weight and will avoid food to achieve their ideal weight	162
9.7	Bulimia nervosa	individuals who are obsessed with controlling their body weight and they will eat a lot and vomit out the food that they have eaten or take laxatives that cause diarrhoea	162
9.7	Muscle dysmorphia.	individuals who feel that their size is small with not enough growth.	162

CHAPTER 10 : TRANSPORT IN HUMANS AND ANIMALS

CHAP	TERM	MEANING	T.B.PAGE
10.1	Haemolymph	a blood-like nutritious liquid found in most invertebrates such as insects and molluscs	169
10.2	Ostium (find your own meaning)		169
10.2	Blood	a type of connective tissue that is made up of blood plasma, blood cells and platelets	173
10.2	Heart	functions as a muscular pump that circulates blood to the whole body.	173
10.2	Blood vessels	consist of arteries, capillaries and veins that are connected to the heart, and transport blood to all the body tissues	173
10.2	Aorta	main blood artery	174
10.2	Vena cava	main vein	174
10.2	Tricuspid valve	located between the right atrium and the right ventricle	174

10.2	Bicuspid valve	located between the left atrium and the left ventricle.	174
10.2	Platelet	fragments of cell cytoplasm in the blood that contain no nucleus and are involved in blood clotting.	313
10.2	Plasma	the medium of transportation in the body.	175
10.2	Sternum	The bone in the middle section of the vertebrate chest.	176/313
10.2	Arteries	blood vessels that transport blood out of the heart.	178
10.2	Capillaries	blood vessels with thin walls, as thick as one cell.	178
10.2	Venules	larger blood vessels formed when capillaries rejoin.	178
10.2	Capillary network	group of capillaries	178
10.3	Myogenic	the heart contracts and relaxes without receiving any impulse signal from the nervous system	180
10.3	Pacemaker	initiates and coordinates the contraction of the heart	181
10.3	Sinoatrial node (SA)	main pacemaker	181
10.4	Blood clotting	a series of chemical reactions that takes place in the blood when someone is injured to prevent excessive bleeding.	183
10.4	Prothrombin	an inactive plasma protein	183
10.4	Thrombin	an active plasma protein that acts as an enzyme	183
10.4	Fibrin	a threadlike protein fibre that forms a network on the wound surface to trap erythrocytes and to close the wound to prevent blood loss.	183
10.4	Haemophilia	1. an example of an illness that prevents blood from clotting. 2. Blood disease that causes the patient's blood clotting to be impaired due to the lack of clotting factors.	184/312
10.4	Thrombus	formation of a blood clot	184
10.4	Embolus	a blood clot that's transported by blood flow	184
10.5	Rhesus factor (Rh factor)	another antigen found on the surface of the red blood cells	186
10.6	Cardiovascular diseases	diseases related to the heart and the blood circulatory system	187
10.6	Atherosclerosis	the formation and deposition of plaque on the artery walls	187
10.6	Angina	severe chest pain	187
10.7	Tissue fluid	blood plasma that occupies the intercellular space and constantly bathes cells	189

10.7	Lacteals	lymphatic capillaries	192
10.8	Oedema	swelling of the body tissues	193

CHAPTER 11 : IMMUNITY IN HUMANS

CHAP	TERM	MEANING	T.B.PAGE
11.1	Pathogen	a microorganism that causes diseases	200
11.1	Antigens	foreign particles	200
11.1	Antibodies	proteins found on the lymphocyte surface or proteins released by lymphocytes into the blood plasma	200
11.1	Immune response	interaction between antibodies and antigens that cause antigens to be destroyed	200
11.1	Immunity	the body's ability to fight infections caused by pathogens or other foreign objects, through specific attacks on the pathogens	200
11.1	Lysozyme	an antimicrobial protein that can dissolve and destroy some types of bacteria.	201
11.1	Phagocytosis	process by which microorganisms or other particles such as dead cells are trapped and digested by phagocytes.	202
11.1	Phagocyte	a leucocyte that can carry out phagocytosis.	202
11.1	Inflammation	the immediate response that destroys and neutralises harmful actions of microorganisms and toxins at the early stages of infection.	203
11.1	Pus	a combination of microorganisms, fragments of tissues and white blood cells that can be found in seriously infected areas or damaged tissues.	203
11.2	Agglutination	antibodies coagulate the pathogens and make them an easy target to be trapped and destroyed by phagocytes	204
11.2	Neutralisation	antibodies bind with toxins produced by bacteria and neutralise the toxin.	204
11.2	Precipitation	antibodies react with dissolved antigens to form an insoluble complex (precipitate) that is easily destroyed by phagocytes.	204
11.2	Opsonisation	antibodies combine with antigens and act as a marker for phagocytes to recognise the antigens and destroy them.	205
11.2	Lysis	antibodies combine with antigens and cause bacteria to be broken down and decomposed.	205

11.3	Active immunity	lymphocytes produce their own antibodies as a response to stimulation by the antigens.	205
11.3	Passive immunity	the body receives antibodies from an external source.	205
11.4	Human Immunodeficiency Virus (HIV)	a virus that attacks the human immune system.	209

CHAPTER 12 : COORDINATION AND RESPONSE IN HUMANS

CHAP	TERM	MEANING	T.B.PAGE
12	neuron	cells in the nervous system that consists of the axon, cell body and dendrites	
12	Receptor	specialised sensory cells that detect stimuli.	
12.1	Sensitivity	the ability of organisms to detect changes in their environments and respond to these changes.	216
12.1	Stimulus	the change that stimulates the response	216
12.1	External stimulus	stimuli from the external environment include light, sound smell, taste, surrounding temperature, pressure, and touch.	216
12.1	Internal stimulus	stimuli from the internal environment include changes in blood osmotic pressure, changes in body temperature and changes in blood sugar level.	216
12.1	Receptors	special sensory cells	216
12.1	Response	the way organisms react after detecting a stimulus	216
12.1	Effector	parts of the body that receive instructions from the control centre and respond to the stimuli accordingly	216/311
12.1	Coordination	a stimuli detection process by receptors that ends in appropriate responses by effectors	217
12.3	Synapse	a site between two nerve cells, or neurons and effector to communicate.	223/313
12.3	Dendrites	the nerve fibre that receives impulses from adjacent neurons and transmits them towards the cell body	223/311
12.3	Axon	an elongated branch of the body cell	223
12.3	Myelin sheath	an insulating membrane that coats the axon	223
12.3	A node of Ranvier (find your own meaning :))		223
12.3	Synaptic knob	a swelling at the end of the axon branch	223
12.3	Nerve impulses	information is sent along the neurone through electrical signals	224

12.4	Synapse	a narrow gap that separates the synaptic knob from neurone dendrites that receive the impulses.	226
12.4	Voluntary action	actions that we are conscious of and done on our own will	226
12.4	Involuntary action	actions that occur automatically and occurs without us being conscious	226
12.4	reflex arc	the stimulus pathway that triggers reflex responses. The pathway consists of receptors, control centres and effectors.	313
12.4	Reflex action	a fast response a stimulus without being controlled by the brain	227
12.4	Knee jerk/patellar reflex	this reflex uses the nerve pathway that involves two neurones, the sensory neurone, and the motor neurone	229
12.5	Multiple sclerosis	a progressive disease as a result of an abnormality in the immune system that attacks the myelin sheath in the brain and spinal cord	230
12.5	Alzheimer's disease	this disease causes the loss of ability to reason and to take care of oneself.	230
12.5	Parkinson's DISEASE	the shrinkage of the nervous system that causes tremors in the limbs, jaw, foot and face.	230
12.5	Lou Gehrig/Amyotrophic Lateral Sclerosis (ALS)	this disease is caused by the deterioration and death of motor neurones that control the movement of muscles such as chewing, walking and talking.	230
12.5	Attention-Deficit Hyperactivity Disorder (ADHD)	a type of brain disease that causes someone to become hyperactive, unable to concentrate and gets easily bored.	230
12.5	Autism	a type of disease related to the development of nerves in the brain.	230
12.6	Pituitary gland	main gland of the endocrine system	234
12.6	insulin	a hormone that stimulates the conversion of glucose to glycogen in the liver and muscle cells	312
12.7	Diabetes mellitus	an individual who does not produce enough insulin or cannot use the insulin produced	238
12.7	Hypoglycaemia	blood glucose level is too low	238
12.7	Diabetes insipidus	the posterior lobe of the pituitary gland of an individual fails to secrete the antidiuretic hormone (ADH)	238
12.7	Hypothyroidism	inadequate thyroxine secretion in adult individuals	238

12.7	Hyperthyroidism	a situation that occurs in an individuals when too much thyroxine is secreted	238
12.7	Gigantism	excessive secretion of the growth hormone (GH) during childhood causing abnormal elongation of bones	239
12.7	Dwarfism	low secretion of the growth hormone (gh) during the period of growth delays the growth of bones	239

CHAPTER 13 :

CHAP	TERM	MEANING	T.B.PAGE
13.1	Homeostasis	the regulation of physical and chemical factors of the internal environment within normal ranges for the cell to function in optimum conditions.	246
13.1	Vasodilation	arterioles in the skin dilate	247
13.1	Vasoconstriction	arterioles in the skin are stimulated to constrict	248
13.1	Breathing	an involuntary action that is regulated by the respiratory control centre in the medulla oblongata	250
13.1	Carotid artery	the artery in the neck that supplies blood to the head	251
13.1	Blood osmotic pressure	the concentration of dissolved materials and volume of blood and body fluids	252
13.2	Nephron	the functional unit in the kidney that consists of the glomerulus, Bowman capsule, convoluted tubule, Henle loop and collecting duct.	312
13.2	Ultrafiltration	the filtration process of blood plasma that contains dissolved nutrients, across the wall of blood capillary.	313
13.2	Glomerulus.	a cluster of blood capillaries	254
13.2	Loop of Henle	a long U-shaped tubule that extends to the renal medulla.	254
13.2	Collecting duct.	the distal convoluted tubule of several nephrons that join together	254
13.2	Secretion	the process of secreting waste materials in the blood that were not filtered earlier into the renal tubules.	255
13.3	Kidney stones	hard masses made of uric acid, calcium oxalate or crystalline calcium phosphate	259

CHAPTER 14 :

CHAP	TERM	MEANING	T.B.PAGE
14	Ligament	elastic tissues that connect bone to bone.	312
14.2	Axial skeleton	1. comprises the skull, vertebral column, ribs, and sternum (breastbone). 2. the part of the skeleton that consists of the skull, vertebral column, sternum and rib cage. forms the main axis of the body.	267/311
14.2	Appendicular skeleton	1. comprises the pectoral girdle, pelvic girdle, and upper and lower limbs. 2. the part of the skeleton that consists of the pectoral and pelvic girdle, leg bones and arm bones.	267/311
14.2	Sacrum	the triangular bone in the hip area of the vertebral column.	313
14.2	Antagonistic muscle	muscles work in pairs and act in opposite directions, that is if one muscle contracts, the other relaxes, and vice versa.	272
14.2	The extensor	a muscle that straightens the limbs when it contracts	272
14.2	The flexor	muscle that bends the limbs when it contracts	272
14.2	Tendon	flexible non-elastic tissue that joins the muscle to the bone..	272/313
14.3	Biceps femoris	the flexor	273
14.3	Quadriceps femoris	the extensor	273
14.3	Myotome	W-shaped muscle segments	274
14.4	Osteoporosis	a bone disorder characterized by weak bones that may break easily	277
14.4	Osteomalacia	a soft bone condition due to a lack of calcium, phosphorus, and vitamin d.	278
14.4	Osteoarthritis	caused by decreased synovial fluid, and wear and tear of the cartilage in certain joints among the elderly	278
14.4	Scoliosis	the backbone of an individual which is bent to the side, forming an 's' or 'c' shape when viewed from the back	278

CHAPTER 15 :

CHAP	TERM	MEANING	T.B.PAGE
15	Embryo	the early developmental stage of zygote in seeds (in plants), eggs (in animals), or uterus (in humans and animals)	311
15	Zygote	the union of the ovum (female gamete) and sperm cell (male gamete) during fertilisation.	313

15.2	Graafian follicle	the mature follicle in the ovary that contains secondary oocyte and produces the hormone oestrogen.	311
15.2	Gametogenesis	1. the production process of reproductive cells (gametes) 2. the process of male and female gametes formation in the reproductive organ.	288/311
15.2	Spermatogenesis	a process of sperm production that takes place in the seminiferous tubules.	288
15.2	Oogenesis	1. the process of secondary oocyte or female gamete production. 2. the formation of the ovum in the ovary	292
15.2	Secondary oocyte	a large cell that is surrounded by a gel-like substance and follicular cells.	292
15.3	Implantation	the adhering of the embryo (at the blastocyst stage) to the wall of the uterus.	312
15.3	Menstrual cycle	the production of a secondary oocyte and thickening of the endometrial wall throughout one cycle.	293
15.3	Menopause	ovulation and menstruation stop naturally	296
15.3	Placenta	the organ that forms from the tissue of the foetus and the mother to allow for material exchanges between the foetus and the mother.	313
15.4	Morula	a solid ball of cells during the development of embryo before the blastocyst stage.	312
15.4	Blastocyst	the early developmental stage of mammalian embryo that consists of a ball of cells with a hollowed centre that is filled with fluid	311
15.4	Umbilical cord	a tube that contains the umbilical vein and umbilical arteries.	298
15.4	Placenta	the exchange site of substances between mother and foetus.	299
15.5	Twins	two or more children that are born from one pregnancy	300
15.5	Conjoined twins	develop when there is incomplete division of the embryo in identical twins.	301
15.6	Impotency	occurs when a husband and wife are unable to conceive.	302
15.7	Growth	an irreversible, permanent process that involves the increase in the number of cells, size, volume and weight of the organism's body.	303

15.7	Dry weight	the weight of an organism after all the fluid is removed from its body	303
15.7	Fresh weight (find your own meaning)		303
15.7	Ecdysis	the moulting process of the exoskeleton that allows growth and development of insects	306
15.7	Instar	stages between ecdysis	306

GLOSSARY (not found within the textbook pages or they are found in many chapters) (find their respective chapter yourself too!)

CHAP	TERM	MEANING	T.B.PAGE
	Balanced nutrition	food nutrition that contains all nutrients in the right amount to fulfill the requirements of the body.	311
	Hormone	chemical substances that regulate specific functions in the body	311
	Lysosome	membrane-bound sacs that contain enzymes that digest substances in the food vacuole	311
	Nucleus	the largest cellular component in the cell that contains genetic materials. the nucleus acts as the control centre for the cell.	312
	Organism	living things that are capable of conducting living processes such as feeding, growing, reproducing and breathing.	312
	Vertebra	small bones that form the spine.	313