Assessment Schedule – 2006

Biology: Describe the functioning of human digestive and skeletomuscular systems (90166)

Evidence Statement

Question	Evidence contributing to Achievement	Evidence contributing to Achievement with Merit	Evidence contributing to Achievement with Excellence
1(a)	Acts as a **lubricating / nourishing** fluid.		
(b)	(i) Identified correctly as a: **ligament**.	(ii) Purpose: Ligaments connect / join / link bones AND gives strength / support / stops sideways movement.	
(c)	Reduced mobility / activity because of pain / stiffening / swelling of joint. OR Gives a simple definition of arthritis, eg: Inflammation of a joint.	Gives a reason for the inflammation / degeneration of a joint that is linked to symptoms of reduced mobility because of painful swelling or stiffness, eg: The wearing away of (articular) cartilage causes bones to rub over one another. The joint / knee swells and it becomes painful to walk.	Compares how **osteo** and **rheumatoid** arthritis affects joint mobility. Includes detail of osteoarthritis being the wearing away of articular **cartilage**, bones rubbing over one another and the joint **swelling**. Joint / knee movement becomes **painful**. Rheumatoid arthritis is inflammation and breakdown of the **synovial membrane**, reducing production of synovial fluid, **reducing lubrication** and causing **stiffness** and pain.
2(a)	Accept any TWO reasonable combinations such as Ball and socket: hip Sliding: wrist Fixed: skull (not hinged)		
(b)	Describes the fact that muscles have to **oppose** each other, eg: • A pair of muscles pull a joint in opposite directions. • Most muscles are in pairs for producing movement in one direction, and one for the opposite direction.	Explains that muscles can only pull NOT push, therefore in order to return to a relaxed (extended) state the muscle must have a complementary muscle that can produce the opposite action (**both** actions explained), eg: • The flexor muscle contracts to bend the joint and the extensor muscle contracts to straighten the joint. May relate to a specific joint such as the arm, eg: • When the biceps muscle contracts the arm bends. When the triceps muscle contracts the arm straightens.	

(c)	Describes **both** injuries: • Sprain as ligament damage. • Strain as muscle damage.	**Cause AND effect** for strain **OR** sprain, eg: (Ligaments are elastic, but even so can become damaged.) This is caused when bones are pulled apart / ankle rolled (cause) and tearing the ligament (effect), this is called a sprain. **OR** Failure to warm up before exercise (cause) can lead to a pulled / overstretched muscle (effect), this is called a strain.	Reasoned prognosis about the affect of the injuries on the athlete's performance, eg: • Joints that have suffered a sprain won't bend effectively and are not supported efficiently. Damaged ligaments may become less elastic and prone to further damage. • Torn muscles are unable to provide pull on the bones so movement is restricted or unavailable. Injuries resulting in broken ligaments can lead to instability of the joint. • Torn's muscles heal faster than ligaments because they have a good blood supply. **OR** Cause **AND** effect for both strain **AND** sprain **AND** impact of each on the individual.
3(a)	<table><tr><td>Name.</td><td>Function</td></tr><tr><td>Molar</td><td>Crushing or chewing / grinding</td></tr><tr><td>Canine (not K9)</td><td>Piercing / holding / tearing</td></tr><tr><td>Incisor</td><td>Cutting / biting</td></tr></table> Must have 5 / 6 boxes completed.		
(b)	Chemical digestion involves enzymes, not all the enzymes are in the mouth. **OR** An enzyme in the mouth / saliva digests starch. **OR** There are no enzymes in the mouth / saliva that can digest other foods.	The **only** enzyme in the mouth / saliva is (salivary) amylase; which is **specific** to starch digestion. **AND** Other foods are digested by different enzymes.	
(c)	An example of a pH in one part of the digestive system and the enzyme or food involved, eg: • The stomach has a low pH and pepsin / proteases are found here. • The stomach is acidic and protein is digested here.	Explanation of how different pH levels (pH values stated or described as low, high, acidic, neutral, basic / alkaline) provide **optimum conditions** for enzyme activity, in different parts of the digestive tract. An example of a named enzyme is given, eg: • Different enzymes work best at different pH levels. Pepsin digests protein in the stomach and works best at a low pH.	Digestion of food discussed as a process occurring in two different parts of the digestive system that require different pH levels for the optimum efficiency of the different enzymes involved at each stage. Enzymes and substrates are named. Enzyme activity may be related to denaturing.

4(a)	The products of digestion can be passed onto / into the blood / body (for transport around the body).		
(b)	Accept a well-labelled diagram. **OR** Mention of the increase in surface area. **OR** A description of villi as finger-like projections.	Explanation that the combination of many villi **and** the micro-villi (diagram) increase the surface area to a **highly significant extent**. Mentions the relationship between this increased S.A. and the effective absorption (into the capillaries).	
(c)	Describes bile as alkaline / breaks up fat / emulsify fat (may mention secretion by liver or storage in gall-bladder) **AND** pancreatic juice as containing enzymes.	Explains (that although bile has no enzymes), it breaks up fat globules into tiny droplets. **AND** Pancreatic juice has specific enzymes for digestion of fat (lipase).	Links the two effectively showing that the EMULSIFICATION (accept other variants of this key word) creates a significant increase in the S.A. allowing the lipase to effectively (more quickly) break up the fats into fatty acids and glycerol.

Judgement Statement

Biology: Describe the functioning of human digestive and skeletomuscular systems (90166)

Achievement	Achievement with Merit	Achievement with Excellence
SEVEN questions answered correctly, including at least THREE from Questions One and/or Two AND at least THREE from Questions Three and/or Four. Minimum of 7 × A, including 3 × A from Question One/Two AND 3 × A from Question Three/Four.	EIGHT questions answered correctly, including at least FIVE from Question One/Two AND Question Three/Four, and at least THREE at Merit level from Question One/Two OR at least THREE at Merit level from Question Three/Four. Minimum of 3 × M from Question One/Two OR from Question Three/Four, AND 5 × A from Question One/Two AND Question Three/Four.	EIGHT questions answered correctly, including at least FIVE from Question One/Two AND Question Three/Four, and at least ONE at Merit level and TWO at Excellence level from Question One/Two OR at least ONE at Merit level and TWO at Excellence level from Question Three/Four. Minimum of 2 × E + 1 × M from Question One/Two OR from Question Three/Four, AND 5 × A from Question One/Two AND Question Three/Four.