

Assessment Schedule – 2007

Human Biology: Describe functioning of the human reproductive system (90179)

Evidence Statement

Question	Evidence Contributing to Achievement	Evidence Contributing to Achievement with Merit	Evidence Contributing to Achievement with Excellence
ONE 1(a)	<p><i>Describes BOTH of</i></p> <p>Where: in testes / testicles/seminiferous</p> <p>When: from puberty (till death) / 11–13 yrs+/when sperm produced.</p>		
1(b)	<p><i>Describes TWO roles, eg:</i></p> <ul style="list-style-type: none"> • Needed for sperm production. • Helps male sex organs to mature / testes enlarge / penis enlarges. • Develops male secondary sexual characteristics eg deepens voice, growth of facial hair, shoulders broaden, etc. <p>NOT facial hair & pubic hair.</p> <ul style="list-style-type: none"> • More sex drive • Increase aggression. 		
1(c)	<p><i>Describes ONE of, eg:</i></p> <ul style="list-style-type: none"> • Sperm cannot travel from testes / epididymis to penis. • Semen has no sperm / sperm cannot get into vagina. • Low sperm numbers, unlikely to fertilise egg. 	<p><i>Explains how, eg:</i></p> <p>Sperm cannot travel from testes / epididymis to penis.</p> <p>Linked to</p> <p>Semen / ejaculate contains no sperm / sperm cannot get into vagina.</p> <p>OR</p> <p>Very few sperm so chances of sperm reaching egg very unlikely, ie infertile.</p>	
1(d)	<p><i>Describes ONE of, eg</i></p> <ul style="list-style-type: none"> • (Prostate gland) adds / secretes alkaline fluid onto sperm. • (Seminal vesicles) adds / secretes sugars (proteins / enzymes) onto sperm. • Each gland produces fluid to help sperm move / swim / generic description. 	<p><i>Explains how each structure's secretion helps sperm to function eg</i></p> <p>Energy- what/where/why</p> <p>Alkaline- what/where/why</p> <p>= 2 ideas from each</p> <p>Alkaline fluid/basic from (prostate gland) neutralises some of vagina acid.</p> <p>AND</p> <p>Sugar / fructose (NOT glucose) (from seminal vesicles) – a source of energy for sperm to swim (to an oviduct).</p>	<p><i>As for Merit plus:</i></p> <p>ONE of</p> <ul style="list-style-type: none"> • Semen alkaline fluid, from prostate gland, will help (pH in) vagina to be less acidic / increase pH, so greater numbers of sperm survive in vagina. • Sugar / fructose used by sperm in respiration by the large number of mitochondria (behind the sperm head) provides sperm with source of energy (flagella) to swim the distance from vagina to oviduct. <p>OR</p> <ul style="list-style-type: none"> • 3 ideas for each section in MERIT (glands & secretion correct).

TWO 2(a) (i)	<i>Describes ovulation, eg:</i> Egg/ovum/ova released from ovary or follicle (into oviduct).		
(ii)	<i>Describes fertilisation, eg:</i> egg and sperm (nuclei) fuse/join/unite/penetrate (NOT meet/connects/combines).		
2(b)	<i>Describes implantation, eg:</i> Embryo successfully burrows/ attaches /penetrates/implants into endometrium/ uterine blood lining. OR Idea of embryo being nourished/fed during its development/growth.	<i>Explains why implantation occurred, eg:</i> Embryo successfully burrows/ attaches /penetrates/implants into endometrium/ uterine blood lining. plus: linked to idea of embryo being nourished/ fed during its development/ growth.	
2(c)	<i>Describes TWO of, eg</i> <ul style="list-style-type: none"> • progesterone/ oestrogen levels increase • FSH/ LH levels remain low • menstrual cycle stops/ ceases • endometrium continues to thicken • villi develop between embryo and mother • placenta will form/ develop. • stop ovulating • no FSH produced. 	<i>Explains TWO of, eg</i> After implantation: <ul style="list-style-type: none"> • progesterone (& oestrogen) levels increase because the yellow body/ corpus luteum continues to act as a gland producing these hormones. • higher levels of progesterone (& oestrogen) ⇒ endometrium does not disintegrate, menstruation will not occur. Menstrual cycle has stopped. • endometrium continues to thicken. Villi/ network of capillaries form between embryo and endometrium to help the exchange of materials between embryo and mother. (Later develops into the placenta.) • Higher levels of oestrogen /progesterone inhibit FSH (production), no more follicle(s) mature in ovary, no more ovulation (after implantation). 	<i>Explains THREE points in Merit and links the ideas coherently.</i>

<p>THREE (a)</p>	<p><i>Any TWO of, eg: FEATURES (NOT functions)</i></p> <ul style="list-style-type: none"> • Mother and embryo/foetus blood supplies lie close together (small distance between them). • Large capillary network lets substances move quickly between mother and embryo/foetus. • Large surface area for rapid exchange of substances between mother and embryo/foetus. • Baby's capillaries surrounded in pool of mother's blood/sinuses. • Placenta semipermeable. • Counterflow current (foetal opposite to mother's). 		
<p>(b) (i) & (ii)</p>	<p><i>Identifies ONE of:</i></p> <p><u>DOES NOT CROSS</u></p> <ul style="list-style-type: none"> • Red blood cell(s)/white blood cells/blood cells • (clotting) proteins. <p>AND</p> <p><i>Identifies ONE of:</i></p> <p><u>DOES CROSS</u></p> <p>oxygen, soluble nutrients, glucose, carbon dioxide, urea, virus, nicotine, amino acids, pathogens, alcohol, antibodies, water [OR any other suitable named substance].</p>	<p><i>As for Achievement, plus: explains why in terms of size, eg:</i></p> <p>blood cells are too large to pass through a capillary (wall)/blood cells are trapped within blood vessels (capillaries).</p> <p>OR</p> <p>Small molecules can pass/diffuse easily through capillaries.</p>	<p><i>As for Merit, plus: explains in terms of diffusion or diffusion gradient, eg</i></p> <p>Oxygen, a small molecule, moves/diffuses from high concentration in mother's capillaries to low concentration in foetus's capillaries.</p> <p>OR</p> <p>carbon dioxide, a small molecule, moves/diffuses from high concentration in foetus's capillaries to low concentration in mother's capillaries.</p>

Judgement Statement

Achievement	Achievement with Merit	Achievement with Excellence
<p>SIX opportunities answered at Achievement level or higher.</p> <p>6 × A</p>	<p>SIX opportunities answered, with THREE at Merit level or higher.</p> <p>3 × M + 3 × A</p>	<p>Six opportunities answered, with at least ONE at Excellence level and TWO at Merit level.</p> <p>1 × E + 2 × M + 3 × A</p>