

Assessment Schedule – 2010**Human Biology: Describe functioning of the human reproductive system (90179)****Evidence Statement**

Q	Achievement	Achievement with Merit	Achievement with Excellence
ONE	Sufficiency <i>Describes any THREE ideas from a, b, & c. Cannot get all three ideas from (c) alone.</i>	<i>Explains any TWO ideas.</i>	<i>Discusses c.</i>
(a)	Time when a child's body changes into an adult body / reaches sexual maturity. OR Time when reproductive system becomes functional.		
(b)	<i>Eg:</i> <ul style="list-style-type: none"> • Testes get bigger/ testes drop/ penis enlarges/ he begins to produce semen. • Testosterone signals the testes to start producing sperm/ gametes. 	<i>Eg:</i> <ul style="list-style-type: none"> • Increasing/ high levels of testosterone stimulates/ testes enlarge and drop/ penis enlarges/ seminal vesicles and prostate gland start to produce semen. • Increasing/ high levels of testosterone stimulates/ triggers the testes to start producing sperm/ gametes. <p>[If testosterone levels were low none of the above would happen.]</p>	
(c)	<i>Eg:</i> <ul style="list-style-type: none"> • Acidic vagina kills many sperm. • Deformed sperm. • Sperm run out of energy to swim the distance. • Sperm can't pass through cervix mucus. • Sperm get trapped in uterus. • Some sperm swim up the wrong oviduct. 	<i>Eg:</i> <ul style="list-style-type: none"> • If sperm lack neutralising fluid they will be killed in large numbers in the acidic vagina. • If sperm lack sugars they will run out of energy. Sperm will lose the ability to swim/ move their tail – they will not reach the egg. • Many sperm will not be able to pass through the thick sticky cervical mucus-they will not reach the egg. • Some sperm swim into folds in the uterus tissue and meet a wall/ get trapped. Their journey is stopped early. • Some sperm swim up the wrong oviduct and don't meet the egg. • Deformed sperm, with two tails, can't swim the distance to meet the egg. 	<i>Elaborates TWO ideas in Merit into a comprehensive answer</i> <ul style="list-style-type: none"> • If sperm lack the neutralizing fluid from the prostate gland they will be killed in large numbers in the acidic vagina. • If sperm lack the sugars from the seminal vesicles/ prostate gland secretions, they will run out of fuel (for respiration) / energy. Sperm will lose the ability to swim/ move their tail – they will not reach the egg. • Many sperm will not be able to pass through the thick sticky cervical mucus (if ovulation is not about to occur). Sperm cannot continue up through the uterus to the egg. <p>Linked to The chances of a sperm fusing with an egg to fertilise it is very small.</p>

TWO	<p>Sufficiency <i>Describes one idea from a AND one idea from 'no fertilisation' in b AND one idea 'with fertilisation' in b.</i></p>	<p><i>Explains any TWO ideas.</i></p>	<p><i>Discusses b.</i></p>
(a)	<p>Eg: (Fertilised) egg needs a thick uterus lining to implant.</p>	<p>Eg: The time it takes for the fertilised egg to travel from the ovary to the uterus (about 5 days) allows the uterus to thicken / grow a new lining of blood vessels. Thus the fertilised egg / young embryo have a greater chance of successful implantation.</p>	
(b)	<p><i>Eg: if no fertilisation occurs</i></p> <ul style="list-style-type: none"> • Corpus luteum breaks up. • Blood hormone levels drop. • Progesterone level drops. • Thickened uterus lining breaks down. • Menstruation / bleeding will occur around day 28. <p><i>Eg: if fertilisation occurs</i></p> <ul style="list-style-type: none"> • Corpus luteum continues to produce progesterone / oestrogen. • Progesterone / oestrogen blood levels remain high. • Uterus lining remains thicker. • No menstruation / bleeding occurs. 	<p><i>Explains by linking hormones to the regulation of the menstrual cycle.</i></p> <p><i>Eg: if no fertilisation occurs:</i></p> <p>The hormone levels of progesterone (and oestrogen) drop. This in turn causes the thickened uterus lining to break down and shed. Menstruation occurs.</p> <p>OR</p> <p><i>Eg: if fertilisation occurs:</i></p> <p>The corpus luteum continues to produce progesterone. This maintains the thickened state of the uterus lining for the young embryo to implant. The mother will not get her period / not menstruate.</p>	<p><i>Discusses by explaining what happens to the female reproductive system for both occurrence and non occurrence of fertilisation.</i></p> <p><i>Eg:</i></p> <p>If no fertilization occurs the corpus luteum / yellow body breaks down which causes the (blood) hormone levels of progesterone (and oestrogen) to drop. This in turn causes the thickened uterus lining to break down and shed. At about this time an increased output of FSH (from pituitary) stimulates a follicle to begin to mature and the women's menstrual cycle continues.</p> <p>If fertilization occurs the corpus luteum continues to produce progesterone (and oestrogen). The higher levels of progesterone maintain the thickened state of the uterus lining to let the young embryo burrow into it. Ovulation stops and the mother will not get her period / not menstruate.</p>

THREE	Sufficiency <i>Describes a or b and THREE from c.</i>	<i>Explains TWO from c.</i>	<i>Discusses c.</i>
(a)	<i>Eg:</i> Placenta- supplies the embryo with nutrients and removes wastes / enables the exchange of nutrients and waste between mother and baby.		
(b)	<i>Eg:</i> Connects embryo/ foetus to the placenta / transfers materials between mother and baby.		
(c)	<p><i>Eg:</i></p> <ul style="list-style-type: none"> • Glucose / oxygen / move from mothers blood into foetus blood (by diffusion) in the placenta • Urea/ carbon dioxide move from foetus blood into mother's blood (by diffusion) in the placenta. • Glucose for respiration/ for energy / oxygen for respiration. • Waste products - Urea/ carbon dioxide become harmful / toxic if they build up in the foetus. • Structures-Large number of villi / large number of capillaries / blood space (maternal). 	<p><i>Eg:</i></p> <ul style="list-style-type: none"> • Glucose/ oxygen required by the foetus for respiration / for energy, diffuses rapidly from the mother's blood into the foetus's capillaries. • Carbon dioxide, a waste product from respiration becomes toxic if it builds up in the foetus. It diffuses quickly across a short distance of a few cells from the foetus's blood into the mother's blood. • Urea, a toxic waste product from protein metabolism, diffuses quickly over a large surface area from the foetus's blood into the mother's blood. • Foetus capillaries lie in the mother's blood space so that substances diffuse quickly across a few cells. • The large number of capillaries / villi in the placenta provide a large surface area / help diffusion to be rapid / efficient between mother and foetus. 	<p><i>Discussion includes reasons why foetus needs the named substances and why it does not need the wastes, linked to two features within the placenta that assist diffusion between mother and foetus</i></p> <p><i>Eg:</i> Within the placenta there are a large number of villi that lie in the maternal blood space. The villi contain (embryonic blood) capillaries that provide a large surface area within the placenta to help substances to diffuse quickly/ efficiently across the short distance / few cells between the mother's blood and the foetus's blood. Glucose and oxygen diffuse from the mother's blood to the foetus. These substances are needed by the foetus for respiration, to give energy for life processes. As the foetus carries out life processes it produces waste products which need to be removed quickly to avoid them becoming toxic and causing harm to the foetus. Carbon dioxide is a waste product from respiration and urea from protein metabolism. These waste products are taken from the foetus to the placenta to diffuse rapidly into the mother's blood.</p>

Judgement Statement

Achievement	Achievement with Merit	Achievement with Excellence
2 A	2 M	1 A + 1 M + 1 E