

Question Number	Answer	Acceptable answers	Mark
1 (a)(i)	A <input checked="" type="checkbox"/> FSH		(1)

Question Number	Answer	Acceptable answers	Mark
1(a)(ii)	<p>An explanation linking two of the following</p> <p>more than one egg { released / fertilised } (1)</p> <p>multiple birth / pregnancy (1)</p> <p>increased risk of complications for mother/babies (1)</p> <p>OR</p> <p>women affected by side effects (1)</p> <p>treatment has to be stopped reducing chance of pregnancy (1)</p>	<p>accept headaches, mood swings, nausea, abdominal pain, diarrhoea, weight gain</p> <p>ignore references to cost</p>	(2)

Question Number	Answer	Acceptable answers	Mark
1 (a)(iii)	D <input checked="" type="checkbox"/> progesterone		(1)

Question Number	Answer	Acceptable answers	Mark
1(b)(i)	<p>An explanation linking three from the following</p> <p>urine sample (1)</p> <p>coloured bead attached to a (mobile monoclonal) antibody (1)</p> <p>antibody { specific to/detects/binds to} { hormone/hCG} (1)</p> <p>immobile antibody at test strip (1)</p> <p>colour accumulates in positive test window (1)</p>	accept named female sex hormones	(3)

Question Number	Answer	Acceptable answers	Mark
1(b)(ii)	<p>An explanation linking two of the following</p> <p>chemotherapy/radiotherapy drug attached to the monoclonal antibody (1)</p> <p>less use of the drug (1)</p> <p>only binds to cancer cells/doesn't target normal cells (1)</p> <p>reduces side effects/named side effects (1)</p>	monoclonal antibody binds to { tumour markers/cancer antigens } (1)	(2)

Question Number	Answer	Acceptable answers	Mark
1(b)(iii)	hybridoma (cell)		(1)

Total for Question 1 = 10 marks

Question number	Answer	Mark
2(a)(i)	<ul style="list-style-type: none"> person 2 had a slightly higher blood glucose level than person 1 after fasting (by up to 0.2 mmols/l) (1) 	(1)

Question number	Answer	Mark
2(a)(ii)	<ul style="list-style-type: none"> person 3 had a much higher blood glucose level than person 1 two hours after taking glucose (up by up to 5.6 mmols/l) (1) 	(1)

Question number	Answer	Mark
2(a)(iii)	Insulin	(1)

Question number	Answer	Mark
2(b)(i)	<p>An answer that combines points of interpretation/evaluation to provide a logical description:</p> <ul style="list-style-type: none"> levels remain low up until day 14 then rise (1) they continue to rise to day 23 and drop at day 24 (1) 	(2)

Question number	Answer	Mark
2(b)(ii)	<p>An explanation that combines identification – understanding (1 mark) and reasoning/justification – understanding (1 mark):</p> <ul style="list-style-type: none"> as ovulation occurs (1) the levels of progesterone released from the corpus luteum increases to maintain the lining of the uterus (1) 	(2)

Question number	Answer	Mark
2(b)(iii)	<p>An explanation that combines identification via a judgment (1 mark) to reach a conclusion via justification/reasoning (1 mark):</p> <ul style="list-style-type: none"> progesterone levels fall after day 23 to 17.11 (1) so uterus wall thickness is not maintained and therefore pregnancy has not occurred (1) 	(2)

(Total for question 2 = 9 marks)

Question Number	Answer	Acceptable answers	Mark
3(a)	<p>An explanation linking four of the following points:</p> <ul style="list-style-type: none"> • (dehydration detected by) osmoreceptors/hypothalamus (1) • pituitary gland (1) • (releases more) ADH (1) • ADH acts on the nephron/collecting duct/tubules (1) • making the {collecting duct/tubules/nephron} more permeable (1) • so more water is reabsorbed (by the body/blood) (1) 	<p>ignore brain</p> <p>accept {small amount/concentrated} urine produced</p>	(4)

Question Number	Answer	Acceptable answers	Mark
3(b)(i)	A corpus luteum		(1)

Question Number	Answer	Acceptable answers	Mark
3(b)(ii)	<ul style="list-style-type: none"> • uterus lining remains thick/uterus lining continues to grow (1) 		(1)

Question Number		Indicative Content	Mark
QWC	3 (b) (iii) *	<p>A explanation to include some of the following points</p> <p>Stages and hormones</p> <ul style="list-style-type: none"> • menstrual cycle consists of menstruation, uterus lining thickening and ovulation • hormones involved in the menstrual cycle are oestrogen, progesterone, FSH and LH <p>Role of the hormones</p> <ul style="list-style-type: none"> • FSH stimulates the follicles to mature • FSH stimulates the production of oestrogen • follicles secrete oestrogen • oestrogen is responsible for the repair of the uterus wall • high levels of oestrogen stimulate the release of LH • LH triggers ovulation • corpus luteum produces progesterone • progesterone maintains the lining of the uterus <p>Control mechanisms</p> <ul style="list-style-type: none"> • oestrogen inhibits the production of FSH • progesterone inhibits the production of LH • progesterone inhibits the production of FSH • menstruation is triggered by low levels of oestrogen and progesterone • Low progesterone levels cause FSH to be released 	(6)
Level	0	No rewardable content	
1	1 - 2	<ul style="list-style-type: none"> • A limited explanation of the menstrual cycle which might include at least one of the stages or some of the hormones involved or the role of one of the hormones involved • the answer communicates ideas using simple language and uses limited scientific terminology • spelling, punctuation and grammar are used with limited accuracy 	
2	3 - 4	<ul style="list-style-type: none"> • A simple explanation of the menstrual cycle including some of the stages and the role of at least two of the hormones involved • the answer communicates ideas showing some evidence of clarity and organisation and uses scientific terminology appropriately • spelling, punctuation and grammar are used with some accuracy 	
3	5 - 6	<ul style="list-style-type: none"> • A detailed explanation of the menstrual cycle including most of the hormones involved, their roles and at least one control mechanism • the answer communicates ideas clearly and coherently uses a range of scientific terminology accurately • spelling, punctuation and grammar are used with few errors 	

(Total for question 3 = 12 marks)