

Question	Answer	Marks	AO Element	Notes	Guidance
1	7.0 — 7.4 (g) ;	1			
2	lipid / fat / oil / carbohydrate / glycogen ;	1			

Question	Answer	Marks	AO Element	Notes	Guidance
3	<p>zygote / fertilised egg, divides ;</p> <p>mitosis / cell division ;</p> <p>forms, an embryo ;</p> <p>(hollow) ball / collection / group / AW, of cells ;</p> <p>goes / moves, down oviduct / down fallopian tube / towards uterus ;</p> <p>detail, e.g. ciliary action / peristalsis / muscle contraction ;</p> <p>implants / AW, into, lining of the uterus / endometrium / wall of uterus ;</p> <p>growth / development, of placenta ;</p> <p>follicle becomes, yellow body / corpus luteum / remains of follicle / AW ;</p> <p>yellow body / corpus luteum / ovary / AW, secretes / releases / produces <u>progesterone</u> ;</p> <p>progesterone maintains, endometrium / lining of uterus / wall of uterus / AW ;</p> <p>progesterone, prevents menstruation ;</p>	5		max [5]	<p>ignore embryo forming after implantation</p> <p>A blastocyst / blastula</p> <p>A embeds / sinks in R zygote implants</p> <p>A any suitable description of yellow body</p>

Question	Answer	Marks	AO Element	Notes	Guidance
	inhibition of FSH (secretion / release) ; prevents, production of more eggs / production of follicles ;				
4	1 provide (named) fertility drug early in menstrual cycle ; e.g. when follicle(s) are developing / 14 days before AI; 2 collect, sperm / semen (from male) ; 3 place, semen / sperm, into uterus / vagina / through cervix ; 4 around the time of ovulation ;	3		max [3]	
5	<i>any three from:</i> voice deepens / AW ; shoulders broaden ; growth spurt / AW ; sexual organs enlarge ; sperm, production / release ; (increased) production of testosterone ; facial hair grows ; pubic / body / underarm, hair grows ; increase in, muscle / bone (mass) ; AVP ;	3			

Question	Answer	Marks	AO Element	Notes	Guidance				
6(a)	<i>any three from:</i> decreases then increases and levels off ; lowest thickness (reached) at day 6 / decreases from day 0/1 to day 6 ; increases in thickness from day 6 to day 15 ; constant thickness between days 15 and 28/0/end ;	3							
6(b)	day 0/1, to day 6 ;	1							
6(c)	X to be drawn on the graph at approximately day 14 ;	1			A ± 2 days				
7	oestrogen ;	1							
8	<table border="1"><tr><td>girls only</td><td>both boys and girls</td></tr><tr><td>menstruation begins breasts grow pelvis broadens</td><td>growth of under arm hair growth of pubic hair</td></tr></table>	girls only	both boys and girls	menstruation begins breasts grow pelvis broadens	growth of under arm hair growth of pubic hair	3		5 correct = 3 marks 4 or 3 correct = 2 marks 2 or 1 correct = 1 mark	
girls only	both boys and girls								
menstruation begins breasts grow pelvis broadens	growth of under arm hair growth of pubic hair								

Question	Answer	Marks	AO Element	Notes	Guidance																														
9	<div>any three from:</div> <table><tr><td></td><td>asexual reproduction</td><td>sexual reproduction</td></tr><tr><td>1</td><td colspan="2">both produce offspring / AW</td></tr><tr><td>2</td><td>one parent</td><td>two parents</td></tr><tr><td>3</td><td>genetically identical offspring / clone</td><td>genetically different offspring</td></tr><tr><td>4</td><td>no involvement of gametes</td><td>(named) gametes</td></tr><tr><td>5</td><td>no fertilisation</td><td>fertilisation / fusion of gametes</td></tr><tr><td>6</td><td>no variation</td><td>variation</td></tr><tr><td>7</td><td>fast</td><td>slow</td></tr><tr><td>8</td><td>mitosis</td><td>meiosis (and mitosis)</td></tr><tr><td>9</td><td>less energy required</td><td>more energy required</td></tr></table> <div>...</div>		asexual reproduction	sexual reproduction	1	both produce offspring / AW		2	one parent	two parents	3	genetically identical offspring / clone	genetically different offspring	4	no involvement of gametes	(named) gametes	5	no fertilisation	fertilisation / fusion of gametes	6	no variation	variation	7	fast	slow	8	mitosis	meiosis (and mitosis)	9	less energy required	more energy required	3		one mark per row response does not have to be in a table	
	asexual reproduction	sexual reproduction																																	
1	both produce offspring / AW																																		
2	one parent	two parents																																	
3	genetically identical offspring / clone	genetically different offspring																																	
4	no involvement of gametes	(named) gametes																																	
5	no fertilisation	fertilisation / fusion of gametes																																	
6	no variation	variation																																	
7	fast	slow																																	
8	mitosis	meiosis (and mitosis)																																	
9	less energy required	more energy required																																	

Question	Answer			Marks	AO Element	Notes	Guidance
10	features of reproduction	asexual reproduction	sexual reproduction	4		one mark for each correct row	
	involves gametes		✓				
	makes more of the same kind of organism	✓	✓				
	produces genetically identical offspring	✓					
	involves fertilisation		✓				
						
11	C			1			
12	B - Gametes fuse together to form a zygote.			1			
[Total: 31]							