

Reproduction

Mark Scheme 6

Level	IGCSE
Subject	Biology
Exam Board	CIE
Topic	Reproduction
Paper Type	(Extended) Theory Paper
Booklet	Mark Scheme 6

CHEMISTRY ONLINE
— TUITION —

Time Allowed: 66 minutes

Score: /55

Percentage: /100

Question	Expected Answers	Marks	Additional Guidance												
1 (a)	<table><tr><td>Function</td><td>structure</td></tr><tr><td>stores urine</td><td>A</td></tr><tr><td>produces gametes</td><td>F ;</td></tr><tr><td>produce seminal fluid</td><td>B / C ;</td></tr><tr><td>move gametes by peristalsis</td><td>D / J ;</td></tr><tr><td>produce testosterone</td><td>F ;</td></tr></table>	Function	structure	stores urine	A	produces gametes	F ;	produce seminal fluid	B / C ;	move gametes by peristalsis	D / J ;	produce testosterone	F ;	[4]	
Function	structure														
stores urine	A														
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produce testosterone	F ;														
(b) 1 2 3 4 5 6 7 8	flagellum / tail ; motile ; smaller / ref to actual sizes ; acrosome ; no food store ; less cytoplasm ; produced in larger numbers ; contains X <u>or</u> Y (chromosome) ;	[max 4]													
(c) (i) 1 2 3 4 5	(Fertility drugs may contain) FSH / LH ; taken / injected, during early stage of menstrual cycle ; stimulates ovaries ; (FSH) stimulates <u>follicles</u> to develop ; (LH / FSH) stimulates ovulation ;	[max 3]													
(ii) 1 2 3	collect sperm from male / donor ; inject into uterus ; when egg likely to be in oviduct ;	[max 2]	Accept through cervix												
		[Total: 13]													

2 (a)	$\frac{34/35/36\text{mm}}{0.14}$ <p>answer = (x) 243 to 257 ;;</p>	[2]	
(b)	<p>no, flagellum / tail ; no, acrosome / (digestive) enzymes ; has, food / energy, store ; more cytoplasm ; larger nucleus ; more membrane / larger surface area ;</p>	[max 3]	<i>only accept structural points</i>
(c)	<p>reduces / halves, number of chromosomes ; so number of chromosomes does not double each generation ; gives variation ;</p>	[max 2]	

Question		Answers	Marks	Additional Guidance
3	(a)	(i) mycelium ;	[1]	
		(ii) hypha ;	[1]	
	(b)	hyphae, secrete / release ; enzymes ; amylase ; breaks down starch to, maltose / glucose ; protease ; breaks down protein to, peptides / amino acids ; products absorbed ; by diffusion / active uptake ;	[max 4]	ignore produce accept soluble nutrients if no digestion given

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3	(c)	(i) antibiotics diffuse through the agar ; (some) kill / stop reproduction of, bacteria ref to not all antibiotics being effective	[max 2]	
		(ii) bacteria grew around the discs ; bacteria are <u>resistant</u> to antibiotics 1 and 5 ; any explanation of resistance ;	[max 2]	R immune bacteria break down antibiotic
		(iii) kill all the bacteria ; some still present even after person feels better ; prevents bacteria becoming resistant ; prevents selection of resistant strain ;	[max 2]	accept description of selection even if the term is not used
			[Total: 12]	

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4 (a) 1 2 3 4 5 6 7 8 9 10	(amniotic) sac, contains / secretes, the amniotic fluid ; sac, prevents entry of pathogens (from vagina) ; A 'disease' <i>amniotic fluid or amniotic sac</i> supports fetus ; protects / cushions, against, damage / sudden movements / bumps / AW ; provides constant temperature / protects against fluctuating temperature ; allows fetus to move ; needed for, bone / muscle, growth / development ; helps, lungs / gut, develop ; collects fetal, urine / waste / excretion(s) ; provides sterile environment / AW ;	[max 4]	A holds A 'the baby' A 'shock absorber' ignore pH, A 'keeps the fetus warm' A correct / suitable, temperature ignore egest
(b) 1 2 3 4 5 6 7 8 9 10	<i>functions of the placenta – one mark per line</i> ref to barrier between blood systems / prevention of maternal and fetal blood mixing ; <i>idea that</i> protection against mother's immune system ; supply of oxygen (to fetus) ; loss of carbon dioxide (from fetus) ; loss of, urea / waste ; R urine protection against, pathogen(s) / named pathogen(s) ; A disease transfer of antibodies (from mother) ; supply of, nutrients / named nutrient(s) ; ignore 'food' supply / removes, water ; secretes, hormone(s) / named hormone(s) ;	[max 3]	award one mark for idea of exchange if no ref. to any substance R breathing progesterone / oestrogen / HCG
(c)	A – dilates / widens / expands / stretches ; B – contracts ;	[2]	ignore 'relaxes' / 'opens'

Question	Answers	Mark	Additional Guidance
4 (d)	<p><i>advantages to max 3</i></p> <p>provides, best / complete / most suitable / AW, food ; easy to digest ; no additives ; contains antibodies / ref. to colostrums / provides passive immunity ; provides protection against, pathogens / diseases / microorganisms ; further detail, e.g. diseases that the mother has had / common diseases ; sterile / no risk of infection from, formula milk / bottled milk ; is at, body / correct, temperature ; no preparation / always available ; bonding with mother ; it's free / 'cheap' ; reduce risk of allergies ; protects against, breast cancer / ovarian cancer ; helps the body to return to 'normal' ; e.g. weight loss / restores uterus contraceptive effect ;</p> <p><i>possible disadvantages to max 3</i></p> <p>transfer of, viruses / HIV / hepatitis B ; painful / sore nipples / mastitis ; stressful / may be embarrassing / AW ; mother may not be able to produce enough milk ; cannot see how much baby has consumed ; task cannot be shared with other parent ; medications / drugs / alcohol, can pass to baby ;</p> <p>AVP ;</p>	[max 4]	<p>A any suitable comment about nutrients A right composition for humans</p> <p>A temporary immunity / AW A named microorganism(s) R 'fights' disease</p> <p>A less likely to get diarrhoea</p>
[Total: 13]			