

15. Drugs

15.1 Drugs

Paper 3 and 4

Marking Scheme

Q1.

(a)		3	R each additional line
(b)(i)	$country\ A = 42\ (doses)$ and $country\ F = 22\ (doses)$; $difference = 20\ (doses)$;	2	ecf from incorrect values
(b)(ii)	D and E ;	1	either order

Q2.

(c)	a substance taken into the body ; that, modifies / affects, (chemical) reactions (in the body) ;	2	
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Q3.

(c)	any two from: alcohol / heroin / AVP ;;	2	
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Q4.

(a)	<i>any three from:</i> overall (trend) is an increase in deaths / AW ; decrease in 2011 ; big(gest) increase, between 2011 and 2012 / in 2012 ; small(est) increase, between 2012 and 2013 / in 2013 OR similar numbers of deaths in 2012 and 2013 ; data, quote / manipulation ;	3	
(b)	<i>any two from:</i> depressant ; increases reaction time / AW ; reduces self-control ; AVP ; e.g. reduced pain or temperature perception / loss of consciousness / lack of coordination	2	
(c)	liver / AVP ;	1	

Q5.

(a)	any substance (taken into the body), that modifies / affects ; chemical reactions (in the body) ;	2	
(b)	bacterial ;	1	
(c)	1 resistance to antibiotic A took the longest time (to be detected) / AW; 2 resistance to antibiotic C took the least time (to be detected) / AW ; 3 resistance to antibiotic B was the first (to be detected) ; 4 <i>idea</i> of the newer the antibiotic the quicker resistance developed ; 5 data manipulation ;	3	e.g. idea of years taken to develop resistance in one of the antibiotics A took 36 years, B took 11 years, C took 3 years
(d)	mucus ; stomach / hydrochloric, acid ; hairs in the nose ; skin ; blood clot / scabs ; AVP ;; e.g. tears, vaginal secretions, ear wax, saliva, cilia	3	

Q6.

(c)	tar / carbon monoxide / nicotine ; addictive ; causes cancer ; COPD / emphysema / bronchitis ; more mucus ; paralysis / damage, of cilia / AW ; narrowing of blood vessels / raises blood pressure / blood more likely to clot ; CHD ; less oxygen, in blood / supplied to body OR to cells OR to tissues ; reduces oxygen supply to fetus / low birthweight ; AVP ;	4	
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Q7.

(c)(i)	any two from: antibiotics used only when essential ; ensuring people, follow instructions / complete course of antibiotics ; do not prescribe antibiotics for, viral / fungal, infections ; AVP ;;	2	
(c)(ii)	placenta forms a barrier between mother and fetus / AW ;	1	

Q8.

(d)	anabolic steroids increase, muscle mass / AW ; gives athletes unfair advantage / ref. to cheating / unethical / immoral ; (named), side effect / effect on health ; can be banned from taking part in sport if found using them ; ref. to illegality ; AVP ; e.g. can lose sponsorship / loss of reputation / AW	3	
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Q9.

(b)	antibiotics ;	1	
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Q10.

(c)	<i>idea that viruses have no antibiotic targets ; viruses, are not alive / are not living / cannot be killed / not cells ; no cell membrane ; no cell wall ; no protein synthesis / no ribosomes ; no metabolism / do not respire ; AVP ; e.g. viruses are inside (host) cells</i>	2	
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Q11.

(a)	fungus ;	1	
(b)	small / no, clear area / AW ; ora (antibiotic in disc), not killing bacteria / (continued) reproduction ; ora	2	A more bacteria growing
(c)(i)	<p>1 correct ref. to mutation (of bacteria) / have resistance gene ; 2 mutation is a change in the DNA / base sequence ; 3 mutations can be caused by, (ionising) radiation / (named) chemicals ; 4 <u>variation</u> (in ability of bacteria to survive antibiotic treatment) ; 5 ref. to (natural) selection / evolution ; 6 bacteria with resistance (survive and) reproduce / breed / multiply / produce offspring ; 7 bacteria with, no / little, resistance, die / do not reproduce ; 8 (bacteria that survive) pass on the resistance, <u>allele / gene</u>, to more bacteria ; 9 bacteria reproduce quickly ; 10 exposure to antibiotics acts as a selection pressure ; 11 only use antibiotics when essential ; 12 complete the full course of prescribed antibiotics ; 13 isolation of patients with infections ; 14 improved, healthcare / sanitation / nutrition / good diet / hygiene / cleanliness / screening / AW ; 15 and 16 AVP ;;</p>	6	
(c)(ii)	viruses, are not alive / not made of cells / AW ; ora viruses do not have, a cell wall / named cell component ;	1	