Devoloping Drugs

QUESTION 1

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	8		1
a)ii)	3210		1
b)i)	if it is toxic		1
b)ii)	if it has side effects		1
Total marks			4

QUESTION 2

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	testing for toxicity / see if it is safe /see if it is dangerous / to see if it works	ignore side effects unqualified	1
b)i)	testing for side effects / testing for reactions (to drug)	ignore to see if it works do not accept dosage	1
b)ii)	any one from • dose too low to help patient • higher risk for patient • might conflict with patient's treatment / patient on other drug • effect might be masked by patient's symptoms / side effects clearer	ignore immune system	1
c)	to find optimum dose	allow testing on larger sample or it makes results more reliable allow to find out if drug is effective / find out if drug works on ill people (not just if drug works)	1
d)i)	tablet / drug / injection) that does not contain drug	allow control / fake / false allow tablet / injection that does not affect body do not accept drug that does not affect body	1
d)ii)	neither patients nor doctors		1
Total marks			6

QUESTION 3

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	addictive	allow addicting / addict / addicted / addiction or similar allow phonetic spelling do not accept / additive / addition	1
a)ii)	junction / gap / space between neurones	allow nerve cells / nerves for neurones allow idea where neurones / nerve cells / nerves meet / join	1
b)i)	tablet with no drug	accept answers that convey this idea eg fake / dummy / sugar pill allow injection with no drug ignore drugs that don't work.	1
b)ii)	for comparison	accept to see if drug / it works allow to see psychological effect or make sure, it is not all in the mind allow as a control ignore 'to make test fair / unbiased'	1
b)iii)	Neither doctors nor volunteers		1
b)iv)	any two from: age (range) sex / gender (mix) previous smoking habits or eg number smoked (before trial) or length of time smoked number in the group other drugs being taken or general health or height / weight / BMI / lifestyle / fitness	ignore factors already controlled ignore reference to all smokers or all want to give up	2
c)	higher percentage / number of smokers who had stopped smoking (than Drug B)	answers must refer to data and be comparative allow best results / most effective ignore best drug unqualified ignore references to 12 weeks / 1 year	1
Total marks			8

QUESTION 4

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	any one from: cells tissues (live) animals / named		1
a)ii)	any three from: (to test for) toxicity / check not poisonous / not harmful interaction with other drugs efficacy or to see if they work or check if they treat the disease dosage or how much is needed	allow side-effect allow converse allow converse	3
Total marks			4

QUESTION 5

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	any two from: • (high) CRP / protein •(no) heart condition •(not high) LDL • over 50 / age • number of tablets (each day)	allow health ignore time ignore placebo / rosuvastatin ignore number of people	2
b)	any one from: •tablet with no drug •tablet that has no effect •tablet without chemicals •tablet that people thought contained statin or reference to psychological effect	allow fake (pill) / dummy (pill) / sugar / chalk (pill) allow drug that has no effect ignore vitamin / mineral pill ignore control / different statin	1
c)	17802 / large number of people or enough people	ignore control group / fair test / control variables ignore time / repeats	1
d)	any one from: • placebo group at risk of heart attack or to allow statin to be given to everyone • statin group 54% less likely to get heart attack or showed that statin worked or showed trial (very) successful • sufficient information gained /	ignore cost ignore reliable ignore got results early	1

	results conclusive • unethical / unfair to carry on trial		
e)	to avoid bias or show impartiality or show results independent	allow manufacturers could cheat ignore reliability ignore could be sued / blamed if trial went wrong ignore manufacturer would know which group got statin / placebo	1
f)	any two from: • reduction in LDL • reduction in (saturated) fats • reduces deposition of fat / cholesterol / LDL in walls of blood vessels or blood vessels less likely to be blocked with fat / cholesterol / LDL	allow improves LDL:HDL balance or LDL and HDL concentrations equal ignore less cholesterol ignore more HDL do not accept less HDL	2
Total marks			8

QUESTION 6

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)		1 mark for each correct line mark each line from left hand box two lines from left hand box cancels mark for that box	3
b)	any three from: reference to reliability, eg only a small number of mice tested or trial too short	Students have been informed that the headline is not justified	3

	or investigation not repeated reference to control, eg mice given caffeine not coffee or 6 cups (equivalence) is more than 1 dose (and) the effect on mice might not be same as on humans (also) text suggests that the treatment improves memory loss (rather than delays it) or mice already have memory loss or experiment only showed improvement in memory or does not show delays Alzheimer's or experiment not done on old mice	allow only tested on mice accept text suggests disease cured allow reference to the fact that mice engineered to have it	
Total marks			6