

# Viral, Bacterial, Fungal and Protist Infection MS

## QUESTION 1

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	produces toxins / damage cells / reproduce rapidly or reproduce in cells	ignore invade cells	1
b)	any three from: <ul style="list-style-type: none"> <li>• TV crew immune / Indians not immune / Indians have weak(er) immune system</li> <li>• TV crew had / produced antibodies / Indians had no antibodies or antibody production faster in TV crew</li> <li>• TV crew had previous exposure to flu / had been vaccinated or Indian tribe had no previous exposure to flu / had not been vaccinated</li> <li>• Indians caught disease from TV crew or TV crew were carriers (of the virus)</li> </ul>	ignore resistant  allow immunised	3
Total marks			4

## QUESTION 2

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	pathogens		1
b)i)	A disease affecting people in many countries		1
b)ii)	birds fly / migrate OR human contact with birds more likely OR there are more birds (than pigs)	accept converse  birds not contained / difficult to control movement	1
c)i)	antibiotics (only) kill bacteria OR antibiotics don't kill viruses	ignore flu is caused by a virus unqualified ignore virus resistant / immune	1

c)ii)	painkillers	accept any correct named painkiller, eg aspirin or paracetamol allow antivirals / Tamiflu ignore medicine / tablets	1
c)iii)	resistant bacteria	in this order	1 1
Total marks			7

### QUESTION 3

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	56	accept 54 - 58	1
a)ii)	increased reasonable qualification eg slowly then more quickly or to 174 / 176 or by 138 / 140		1 1
b)	any two from: •no immunity or antibodies ineffective •no vaccines or humans not immunised • idea of large scale contact or large scale travel	accept no resistance  do not accept passed on ignore no cure	2
Total marks			5

### QUESTION 3

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	(bacteria) produce toxins / poisons (viruses) damage / kills cells or toxins released from cell		1 1
b)	any two from: ✗ viruses live inside cells ✗ viruses inaccessible to drug ✗ drug would damage body cells / tissue		2
c)	any four from: ✗ overuse of antibiotics ✗ bacteria mutate	do not allow antibiotic causes mutation	4

	<ul style="list-style-type: none"> <li>✘ antibiotics kill non-resistant strains or idea of selection</li> <li>✘ reduced competition</li> <li>✘ resistant bacteria reproduce</li> </ul>		
Total marks			8

#### QUESTION 4

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	any two from <ul style="list-style-type: none"> <li>✘ live inside / infect body cells</li> <li>✘ difficult for drugs to enter (body) cells / drug would kill (body) cell</li> <li>✘ antibiotics ineffective against viruses</li> <li>✘ viruses mutate frequently</li> </ul>		2
b)i)	420	correct answer with or without working if answer incorrect evidence of 'number of deaths' $\times 7$ or 60 seen gains 1 mark ignore 6 000 000	2
b)ii)	any three from: <ul style="list-style-type: none"> <li>✘ virus / flu mutates</li> <li>✘ people no longer / not immune</li> <li>✘ white blood cells / memory cells / immune system do not recognise virus</li> <li>✘ relevant reference to antibodies / antigens</li> <li>✘ current vaccine ineffective or no vaccine available then or takes time to develop new vaccine</li> <li>✘ conditions less hygienic / lack of hygiene</li> <li>✘ people in poor health (following world wars)</li> </ul>	ignore resistance  allow no tamiflu / anti-viral drugs  allow people had 'weak' immune system	3
Total marks			7

#### QUESTION 5

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	worldwide or several countries (outbreak)	ignore affects large numbers of people	1
b)	any three from ⊖ new strain of flu / virus changes / virus different ⊖ vaccination not effective or new vaccine not yet developed ⊖ antiviral drugs not effective / not yet developed ⊖ people not immune to it ⊖ virus not recognised by white blood cells / antibodies or antibodies / antitoxins not effective ⊖ people / animals travel between countries / abroad spreading infection	ignore mutation  allow resistant / immune to vaccine  allow drugs / treatment not effective do not allow antibiotics not effective allow people not resistant accept no antibodies / antitoxins ignore white blood cells /  antibodies fighting off	3
Total marks			4