

Name of the Student: _____

Max. Marks : 19 Marks

Time : 19 Minutes

Mark Schemes

Q1.

(a) any **one** from:

- not everyone would go to the doctor
allow not all cases recorded
allow only medically confirmed cases recorded
ignore some cases are unknown
- sample will not always be sent for analysis
- some cases not tested / diagnosed / confirmed
allow idea that doctor may make a judgemental error or mis-diagnosis

1

(b) $\frac{1939}{2030} \times 100$

allow for 1 mark:

$$\left(\frac{91}{2030} \times 100 = \right) 4.5\%$$

1

96 / 95.5

allow 2 marks for correct rounding of 95.51724138
*allow 1 mark for correct calculation using incorrect subtraction **only** if working shown*

1

an answer of 96 / 95.5 scores 2 marks
allow 1 mark only for 95 or other incorrect rounding

- (c) most people are **immune** so do **not become ill** (from infection)
allow herd / community immunity so do not become ill (from infection)
allow most people are immune so do not become infected
ignore most people are immune so don't get / catch it

1

less chance of **non-immune** / **unvaccinated** individuals being exposed to pathogen / measles / virus

reference to an organism is needed
allow 'it' for the measles virus
allow fewer people to pass it on to non-immune people

- (d) **Level 3:** Relevant points (comparisons / reasons) are identified, given in detail and logically linked to form a clear account.

5–6

Level 2: Relevant points (comparisons / reasons) are identified and there are attempts at logical linking. The resulting account is not fully clear.

3–4

Level 1: Points are identified and stated simply, but their relevance is not clear and there is no attempt at logical linking.

1–2

No relevant content

0

Indicative content

differences (after exposure to measles virus):

- greater number / higher concentration of antibodies produced
- quantitative statement, e.g. 9 times higher **or** 0.8 to 7.2
- antibodies produced sooner – idea of immediate response
- antibodies produced quicker
- antibodies stay (in higher concentration) for longer

explanation

- white blood cells / leucocytes / lymphocytes / B cells
ignore phagocytes / macrophages
- reference to previous exposure (of white blood cells) to pathogen / virus
- (white blood cells) recognise pathogen / virus / antigen
- memory cells
- production of specific / correct antibodies

[11]

Q2.

- (a) cells can break off
allow cells invade other tissues 1
- travel in blood
accept travel in lymph (fluid) 1
- (b) $\frac{(89 - 48)}{48} \times 100 = 85.416\bar{6}$ 1
- 85.4 (%)
allow 85.4 (%) with no working shown for 2 marks) 1
- (c) any **two** from:
- similar survival rates for diagnosis in 1961
 - survival rate (for diagnosis in 2011) is 1.5 times greater for prostate cancer compared to bowel cancer
 - (survival rates) have improved for both cancers
 - (survival rate) for prostate cancer has improved more
*accept survival rate for bowel cancer has increased 2.4 times **but** for prostate cancer 3.4 / 3.36 times* 2
- plus **two** from:
- earlier diagnosis
 - improved screening programmes
 - improved drugs
 - difference in level of aggression of cancers
 - difference in ease of removing tumours
reason must be correctly linked to comparison 2

[8]