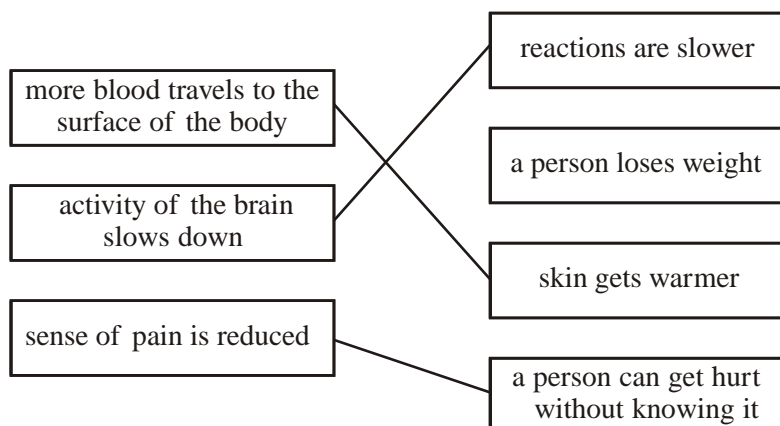


1. (a) (i) •

2 (L6)



award two marks for **all three** lines correct
award one mark for any **two** lines correct
if more than one line is drawn from any box,
do not credit either line

(ii) • reactions are slower 1 (L6)

accept 'activity of the brain slows down'

(b) (i) • placenta accept 'umbilical cord' or 'cord' 1 (L5)

(ii) • amniotic fluid accept 'fluid' 1 (L6)
accept 'uterus'

(c) (i) • toxic 1 (L5)
• flammable accept 'inflammable' 1 (L5)

answers must be in the correct order

(ii) any **one** from 1 (L5)

- they can cause brain damage
- it makes you less co-ordinated

accept 'it makes you dizzy or light-headed'
accept 'you can hallucinate'
accept 'they affect the brain or liver'

- fumes stop you breathing or choke you
- they prevent you taking in oxygen
- you could become addicted

accept 'they damage your lungs'
accept 'it burns your throat'
accept 'it is poisonous' or 'they can kill you'
'it damages or harms your body or makes you ill' are insufficient as they are equivalent to dangerous
'they are toxic' is insufficient
'it contains solvents' is insufficient
'they may dissolve chemicals in the body' is insufficient

[8]

2. (a) **one conclusion should relate to the number of cigarettes and the other to the effect of age**
- the more cigarettes smoked, the greater the number 1 (L10)
or percentage that die
accept 'smoking 5 cigarettes a day is less harmful than smoking 20'
statements that do not make a generalisation, such as 'nearly 1% of men aged 55–64 who smoke 20 cigarettes a day will die of heart disease' are insufficient
 - the risk increases with age **or** is greater in older men 1 (L10)
accept statements such as '20 cigarettes a day is worse when you are 45–64 than under 45'
accept the converse
- (b) any **three** from 3 (L10)
- it causes a blood clot
 - the arteries become narrower **or** blocked **or** less **or** no blood to heart (muscle)
accept 'fat clogs the arteries'
 - less **or** no oxygen to the heart (muscle)
 - less **or** no food **or** glucose **or** nutrients **or** minerals to the heart (muscle)
*accept, for one mark, 'the heart muscle needs oxygen **or** glucose to work properly' even though it does not include a comparison*
'the heart muscle cannot work properly' is insufficient as it is given in the question
 - less **or** no carbon dioxide **or** waste removed
 - may cause a heart attack
accept 'it may raise the blood pressure'
 - cells cannot respire (properly)
- (c) (i) • *mucus* traps bacteria **or** dust **or** particles 1 (L10)
'cell produces mucus' is insufficient
- *cilia* move the mucus (towards the throat) 1 (L10)
*accept 'cilia remove bacteria **or** dust **or** particles'*
- (ii) • it paralyses them **or** they stop moving 1 (L10)
accept 'it clogs the cilia'
accept 'they stick together'
*do **not** accept 'it kills **or** burns cilia'*
*'damages **or** removes cilia' is insufficient*

[8]

3.

- 8 (a) (i) A – vena cava; [2]
B – pulmonary artery; [2]
- (ii) vessels C and D; [1]
- (iii) E – semilunar / watch pocket / aortic (valve);
to prevent the back flow of blood / allow one way flow; [2]
- (b)(i) reduce salt (intake);
reduce fat / cholesterol (intake);
increase fibre (intake);
limit total intake to avoid obesity / overweight;
Any two – 1 mark each [2]
- (ii) smoking;
stress;
lack of exercise;
genetic predisposition / OWTTE;
Any two - 1 mark each [2]
- Total [9]

4.

- (a) (i) depressant
slows down responses / brain activity / speed of nerve impulses /
increases reaction times;
- addictive
causes craving / body to demand more of it / cause withdrawal
symptoms if no longer available; [2]

(ii) damage to liver / liver cells / cirrhosis;

stomach ulcers;

increase in blood pressure;

hardening of arteries;

brain damage / destroy / kill brain cells;

Any two – 1 mark each

[2]

(b) slows reactions / increase reaction / thinking times;

reduces powers of judgement / sleepiness;

visual disturbance / likely to upset vision interpretation / dizziness;

lack of inhibitions / become (more) reckless;

nausea;

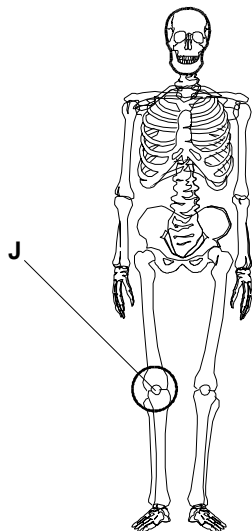
Any two – 1 mark each

[2]

Total [6]

5. (a) (i) a line drawn from the letter **J** to any joint in a leg 1 (L5)

the mark may be awarded if lines are drawn to more than one joint in the leg



*accept a line to a knee, ending within the limits shown
accept a line to a hip or ankle or any joint in the foot
provided that it ends on the line between two bones
do **not** accept a letter **J** written over any joint*

- (ii) any **one** from 1 (L5)
- so that we can bend
 - so that we can move *accept 'so that we can walk'*
do not accept 'so that the bones can bend'
- (b) (i) ribs 1 (L6)
- (ii) lower jaw *do not accept 'jaw' or 'upper jaw'* 1 (L5)
6. (a) any **one** from 1 (L9) [4]
- the force of the muscle would be less **or** lost
 - the (fore)arm **or** bone would not move
accept 'you could not bend or straighten your arm'
 - the biceps **or** muscle could not pull on the bone
 - the biceps **or** muscle would have no effect
accept 'the biceps or muscle would not work properly'
'the arm would not work properly' is insufficient properly'
 - the biceps **or** muscle would have less effect
- (b) any **one** from 1 (L9)
- when one contracts the other relaxes
do not accept 'when one contracts the other expands'
 - when the biceps contracts the forearm is raised and when the triceps contracts the forearm is lowered
accept 'one muscle moves the joint or bone or arm one way and the other muscle moves it the other way'
'they work together' or 'they do opposite things' is insufficient
7. 3.5 *accept answers from 3.4 to 3.6* 1 (L5)
8. (a) (i) accept any number from 38 to 47 minutes 1 (L9)
- (ii) any **one** from 1 (L9)
- the body gets used to the nicotine
accept 'he gets used to it'
accept 'his body will adapt to the nicotine'
 - more nicotine is needed to get the same effect
accept 'more nicotine is needed'

- the body develops tolerance

(b) **The first mark is for a consequence. The second mark is for an explanation. Examples are**

either

- people will smoke more 1 (L9)
- to maintain the nicotine level in their blood above the craving threshold 1 (L9)
accept 'cigarette companies will make more money'

or

- increased risk of lung cancer **or** other smoking-related disease 1 (L9)
- more cigarettes will be smoked 1 (L9)

or

- people will smoke fewer cigarettes 1 (L9)
- lower nicotine level causes less addiction 1 (L9)

(c) any **one** from 1 (L9)

- less oxygen in the mother's blood
do not accept 'no oxygen'
- less oxygen passes through the placenta
do not accept 'only carbon dioxide passes through the placenta'
- less oxygen in the baby's blood
accept 'less oxygen for the baby'
accept 'the red blood cells of the baby or foetus will combine with carbon monoxide'
'carbon monoxide passes through the placenta' is insufficient
- smaller baby **or** brain damaged baby
- baby may be premature
accept 'baby's heart beat rises' or 'baby's blood pressure goes up'

[5]

9. (a) i. mosquitoes/ticks/fleas are carriers/vectors; ® arthropods unequal. ® transmitted by

ii. mosquito feeds on blood of infected bird/mammal;

ii. infected mosquito feeds on human/bird/mammal + passes on infection AW max. [2]

L6

(b) TREAT ANSWER AS A LIST – MARK FIRST TWO RESPONSES

i ref. to raw materials/water/DNA/RNA/nucleic acid + available;

® food ® oxygen

ii ref. to suitable temperature/warm;

iii ref. to cells present; ® r e d blood cells

iv blood provides transport (to cells) AW; max. [2]

L10

(c) ref. to travelling (large) distances/from place to place/migrate/fly;

L8

Ⓐ ref. to export of birds [1]

10. Below is a list of possible answers – It is not exhaustive

L8

Points of entry	Disease spread this way	Prevention
Air	Influenza Common cold TB	Turning head away
Food	Food poisoning Salmonella Typhoid Fever	Washing hands before preparing food Using different chopping boards Closing unhygienic itchens Eating things by “best before” dates
Touch	Scabies Ringworm Athlete’s foot	Limiting physical contact Not sharing towels Using a condom
Water	Cholera Typhoid Fever Leptospirosis	Filtering water Boiling water Preventing contamination of water supplies in the first place.
Animals	Lyme’s Disease (borreliosis) Rabies Malaria	Insect repellents Reducing exposed area of skin Mosquito netting Avoiding dogs/wildlife/

[10]

11. (a) Sexual contact [L5]
 (b) Pain and puss [L6]
 (c) Antibiotics [L7]

12

- a) Acquired Immune deficiency Syndrome [L4]
 b) No, HIV is the pathogen whereas AIDS is the resulting symptoms [L6]
 c) Sexual contact/shared needles/blood transfusions [L8]
 d) Yes, but the concentration is too low to cause infection. [L10]
 e) Zidovudine [L9]
 f) HIV testing between partners/using a condom [L8]
 g) Transfer of body fluids from male to female/penis is covered with skin whereas the vagina is lined with mucosa. [L10]