

MOCK EXAMINATION 5

BOOKLET A

- 1 (4) 2 (1) 3 (2) 4 (3) 5 (4)
 6 (3) 7 (4) 8 (2) 9 (2) 10 (4)
 11 (3) 12 (2) 13 (2) 14 (2) 15 (2)
 16 (2) 17 (2) 18 (3) 19 (3) 20 (3)
 21 (4) 22 (3) 23 (1) 24 (3) 25 (3)
 26 (3) 27 (2) 28 (4)

BOOKLET B

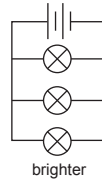
- 1 (a) No exchange of gases could be carried out in the stomata of the leaves as there was a layer of oil on them, blocking them from carrying out their function. As a result, the leaves of the plant were not able to make food and the plant eventually died.
 (b) The plant would die. The black plastic bag covering the plant prevented it from receiving sunlight, thus the plant could not make food.
- 2 (a) Butterfly: Larva stage. The larva of the butterfly has a voracious appetite for leaves and destroys the crops of farmers.
 Mosquito: Adult stage. Adult mosquitoes can spread diseases such as dengue or Zika virus when humans are bitten by them.
 (b) They both have four stages in their life cycles. Their young do not resemble their adults.
 (c) There are 4 stages in the life cycle of a butterfly, but there are only 3 stages in the life cycle of a cockroach. The young of a butterfly does not resemble its adult, but the young of a cockroach (nymph) resembles its adult.
- 3 (a) The rate of Mrs Tan's heartbeats increased as the amount of oxygen in the lift decreased. Her heartbeat started to increase as it was trying to supply more oxygen to meet her body needs.
 (b) Her heart would need to pump even harder and faster to ensure that more blood flowed through the blood vessels within the same period of time. This is so that digested food and oxygen could be carried to the different parts of her body.
- 4 (a) 8 minutes
 (b) The substance dissolved much faster when it had more exposed surface area for liquid Z to act on.
 (c) When we eat food that is broken down into smaller pieces by our teeth, the exposed surface area of the food increases. This allows the digestive juices to act on them more effectively.
- 5 (a) He wanted to find out if the brightness of the bulb would be affected when the number of batteries he added to the electric circuit increased.
 (b) The brightness of the bulb increased.
 (c) The bulb fused.
- 6 (a) The cell wall
 (b) It gives the plant cell its shape.
 (c) It is an animal cell. Cell X has a cell membrane, cytoplasm and a nucleus.
 (d) It is the nucleus. It controls the activities inside the cell and also contains genetic information that is passed on from one generation to the next.

7 (a)

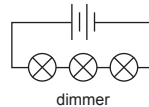
	Process	State of water
A	Condensation	Liquid
B	Evaporation	Gas

- (b) When the boiling water evaporated, it formed water vapour which rose and came into contact with the cooler surface of the glass cover. The water vapour lost heat to the cooler surface of the glass cover and condensed to form water droplets on the glass cover.

- 8 (a) Bulb C
 (b) (i) Bulbs glow brighter



- (ii) Bulbs glow dimmer



- 9 (a) When both circuits are closed, the iron bars A and B become electromagnets. However, iron bar B is a much stronger electromagnet than A because it has more coils around it. The steel paperclip, being made of a magnetic material, will be attracted to B and move towards it as its magnetic force is stronger.
 (b) Since the aluminium paperclip is not made of a magnetic material, it will not be attracted to either of the electromagnets, A or B. It remains where it is, suspended between the two electromagnets.
 (c) (i) Add more batteries/electrical power.
 (ii) Add more coils to the electromagnets.
- 10 (a) The amount of sugar produced by both plants increased as light intensity increased. However, the production of sugar for both plants remained constant when the light intensity reached 70 lux and beyond.
 (b) Plant Z. It was able to produce more sugar than X even when it received a low intensity of light between 0 – 50 lux.
- 11 (a) Towel D. It had the greatest exposed surface area as compared to the other towels since it is placed right at the top.
 (b) He could change the location where there is more sunlight to dry the towels. He could also increase the exposed surface area of each towel by hanging each of them instead of having them folded. (Accept any other possible answers.)
- 12 (a) Point B. The angle of the light source on an object affects the length of its shadow. As the light source is directly above Michael, its shadow cast is the shortest.

