

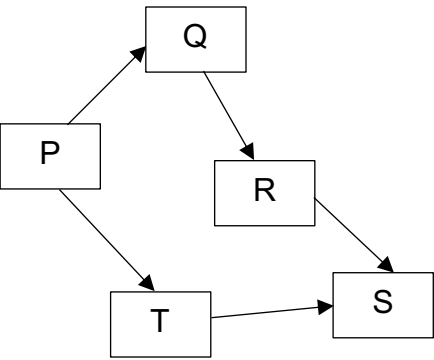
Answer

**(2024
Tao Nan School Prelim)**



Booklet B

29)	a) The holes allow <u>air to enter so that the grasshopper can breathe in oxygen.</u> [1m] b) <u>Food is required for grasshopper to feed on to stay alive.</u> [1m] c) Set-up A is a <u>control set-up to compare and confirm that the survival of grasshopper is only affected by the presence of food</u> [1m] and not other variables.
30)	a) Wind pollination [1m] b) The <u>feathery stigma can trap pollen grains in the air more easily due to larger exposed surface.</u> [1m] c) The farmer can dust the <u>pollen grains on the stigma, so that pollination can take place, followed by fertilization to form fruits.</u> [1m]
31)	a) Heart, blood / blood vessel [1m] {any 2 out of 3 parts} b) The <u>heart pumps blood which circulates around the whole body, carrying important substances like oxygen and digested food to all parts of body while removing waste products like carbon dioxide.</u> [1m] c) To compensate <u>the lack of oxygen in the blood, Adam's heart pumps blood faster to transport sufficient oxygen to all parts of the body.</u> [1m] At the same time, Adam's breathing rate increased so that he <u>breathes in faster to take in sufficient oxygen from the surrounding air.</u> [1m]

32)	a) The <u>presence of grass will cause less soil particles to be washed into the water</u> [1m] as the height of water is more, indicating clearer water. b) The <u>roots of the trees will anchor and hold onto the soil, which prevent the soil from washing downhill</u> [1m] during a heavy rain.
33)	a) Oxygen [1m] b) The snail <u>breathes out carbon dioxide, increasing amount of carbon dioxide.</u> [1m] The <u>plant will take in more carbon dioxide to carry out photosynthesis at a faster rate, hence producing more oxygen bubbles.</u>[1m] c) In <u>section A, the plant is able to carry out photosynthesis in the presence of light, hence producing oxygen for the fish to breathe.</u> [1m]
34)	a) 1 mark for $P \rightarrow Q \rightarrow R \rightarrow S$ 1 mark for $P \rightarrow T \rightarrow S$  <pre> graph TD P[P] --> Q[Q] P --> T[T] Q --> R[R] R --> S[S] T --> S </pre> b) Population of T will decrease. <u>As organism S has no organism R to feed on, more organism S will kill and feed on organism T,</u> [1m] causing T's death rate to increase.

35)	a) As Organism Y gets to rest inside organism X, <u>Y can remain hidden from its predators and will not be eaten.</u> [1m] <u>Organism X can absorb more nutrients from the droppings of Y to grow healthier.</u> [1m] b) The population of Y will decrease as there is less organism X when trees are removed. <u>Organism Y will be more easily spotted by its predators and eaten up, hence increasing in death rate.</u> [1m]
36)	a) The <u>frozen pieces of soup gained heat from the steamer and melted into liquid soup.</u> [1m] b) The frozen pieces are in <u>solid state which have definite shape, but liquid has no definite shape.</u> [1m] c) Due to the hot dumplings, <u>the hot water vapour lost heat to the inner surface of the container</u> [1m] and <u>condensed into water droplets.</u> [1m] d) Hannah should <u>poke holes on top of the container</u> [1m] to allow the hot water vapour to escape.
37)	a) Material G. <u>Distance X is the least, so G allows the least light from the inside to pass through.</u> [1m] b) <u>thickness of the materials,</u> [1m] <u>distance between the material and xiaohui's eyes</u> [1m] c) A light sensor can <u>measure the amount of light accurately and with great precision.</u> [1m]
38)	a) Elastic spring force and gravitational force [1m] b) At 5 cm, <u>the spring is compressed more, hence exerting more elastic spring force against the lid.</u> [1m] <u>With greater mass, there is more gravitational force going against more elastic spring force of the compressed spring,</u>[1m] preventing it from opening.

39)	a) 7cm [1m] b) The pointer will move <u>upwards less. When using one battery, there is less electric current flowing through the iron bar</u> [1m] , hence <u>the electromagnet has less magnetic force of repulsion to push against elastic spring force</u> [1m]of the spring.
40)	a) 1 mark The diagram shows a box labeled 'Ball' with 'kinetic energy' inside. An arrow points from this box to a dashed box labeled 'Cans'. Inside the 'Cans' box, there are two smaller boxes: one labeled 'kinetic energy' and another labeled 'sound energy', separated by a plus sign (+). b) Ball Y. <u>With greater mass, the moving ball Y possessed more kinetic energy</u> [1m] which is <u>converted to more kinetic energy of the cans</u> [1m] when being hit, hence higher chance of the cans falling.
41)	a) 1 mark for correct arrangement of battery to light up at least 1 bulb 1 mark for parallel arrangement of bulbs The circuit diagram shows a battery at the bottom with a switch. A wire goes up from the positive terminal, through the switch, and then splits into four parallel branches, each containing a bulb. The wires then rejoin and return to the negative terminal of the battery. b) 1 mark for correct arrangement of switch c) Add more switches that control each bulb separately so that some bulbs can be switched off when there are less dishes.