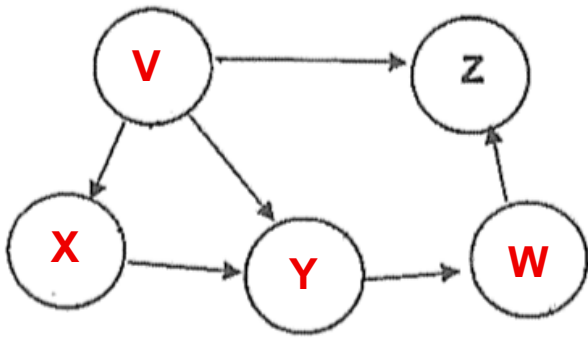


Answer

**2024****Singapore Chinese Girls' School Prelim**

Booklet B

29)	a) [1 mark]  <pre> graph TD V((V)) --> X((X)) V((V)) --> Y((Y)) X((X)) --> Y((Y)) Y((Y)) --> W((W)) W((W)) --> Z((Z)) Z((Z)) --> V((V)) </pre> b) Organisms Y, W [1m] c) When organism eats the juicy flesh of the fruit, <u>the small and indigestible seeds will be swallowed. As the organism moves to the next place further away from parent plant, the seeds will be passed out in the droppings.</u> [1m]
30)	a) Benefit for Animal P : P gets to <u>eat / feed on the pests for food.</u> [1m] Benefit for Animal C : With the relationship with P, <u>there are less pests on the back of animal C, hence C will be healthier.</u> [1m] b) The <u>body of animal C lost heat to the cooler water. / Water gained heat from animal C and evaporated into water vapour.</u> [1m]
31)	a) <u>Digested food from the small intestine is absorbed into the blood.</u> [0.5m] The <u>heart pumps blood high in digested food from the small intestine to be circulated to all parts of the body.</u> [1m] <u>Blood containing oxygen and digested food will be carried to the digestive organs to release energy</u> [0.5m] for them to carry out digestion.

	b) The <u>gullet does not contain any digestive juices and cannot digest any food,</u> hence amount of digested food remains constant. [1m] c) The food is not properly chewed and due to the <u>smaller exposed surface area of food to digestive juices, the rate of digestion is slower.</u> [1m]
32)	a) As the <u>surrounding temperature increased, the length of one complete life cycle of Mosquito A decreased.</u> [1m] b) ☐ Between January and June ☒ Between July and December Reason 1 : Between July to October, the surrounding temperature is the highest of the year, so the <u>eggs of mosquito will take the least time to hatch, hence will develop faster into adult stage.</u> [1m] Reason 2 : Between October to December, there is the most amount of rainfall. With <u>most water for the adult to lay eggs, there will be the highest number of eggs hatch into larva and eventually develop into the most adult</u> to spread disease D. [1m] c) When more female mosquitoes are attracted to the device, there will be <u>less female mosquitoes laying eggs in outside areas with puddles of water, hence less eggs will hatch and develop into adult.</u> [1m]
33)	a) 1 mark <pre> graph TD roots[roots] --> stem[stem] stem --> leaves[leaves] leaves --> fruits[fruits] roots --> fruits </pre>

	b) Photosynthesis is <u>a process whereby carbon dioxide and water is taken in, with light absorbed by the chlorophyll to produce food and oxygen</u>. [1m] c) First, <u>set the temperature of water to be constant at 30°C</u>. [0.5m] Use the <u>ruler to measure different distances between the light source and the water plant to set the changed variable of different intensity of light</u>. [1m] For every different light intensity, <u>count and record the number of oxygen bubbles produced by the plant</u>. [0.5m]
34)	a) Deforestation and farming [1m] b) Global warming causes <u>ice caps to melt and sea level to rise which in turn flood the beaches and hence there are no nesting places for turtles</u>. [1m] c) <u>Above 35°C, all the gender hatched is female. With less male to mate, the reproduction rate will decrease</u>. [1m]
35)	a) She <u>breathes out carbon dioxide which turns limewater chalky</u>. [1m] b) Nitrogen [1m] c) <u>As the number of passengers increased, the amount of water droplets on the window increased</u>. [1m] More passengers will <u>breathe out more warm water vapour</u>, which then lost heat and <u>condensed more to form more water droplets</u>. [1m]

36)	a) Melting is a <u>process whereby a solid changes into a liquid at a fixed temperature/ specific temperature / melting point.</u> [1m] b) <u>Substance X cause the melting point of ice to be lower.</u> [1m] * <i>*OUT OF SYLLABUS (impurities in secondary school)</i> c) Sprinkling substance X cause <u>ice to melt faster into liquid water, hence the road has less snow</u> [1m] which helps vehicles to move through safer with more grip on the road.
37)	a) As <u>the bottom is in contact with hot water, it gained the most heat from the hot water and hence having the highest temperature of 71°C to 80°C.</u> [1m] As <u>the distance of bar from hot water increased, the temperature of metal bar decreased as</u> the further part of the metal bar <u>gained heat at a slower rate.</u> [1m] b) The <u>hot metal bar lost heat to the surroundings, hence maintaining the same temperature as the room after 2 hours,</u> [1m] which is between 21-30°C. c) Foot on hot sand : the <u>foot is in contact with the hot sand, so it gained more heat</u> [1m] and has the temperature of 41°C – 50°C. Foot above hot sand : <u>the foot is further away and air is a poor conductor of heat, so the foot gained less heat from hot sand</u> [1m] and has a temperature of 31-40°C.

38)	a) Electrical conductor [1m] b) When the crow landed on the platform, <u>the weight of the crow is greater than elastic spring force exerted by the compressed spring, causing the contacts to touch each other.</u> [1m] The <u>closed circuit allows electric current to flow through the iron rod, causing it to become electromagnet which attracts the iron door to the right,</u> [1m] closing the cage. c) Decrease the distance between the 2 contacts. [1m]
39)	a) 5 drink bottles [1m] b) When the drink bottle is in between the light source and sensor, <u>less light from the source can pass through the bottle,</u> [1m] hence less light is detected by sensor. c) The <u>material of the bottle could be translucent, hence only some light from the source is blocked.</u> [1m]
40)	a) Frictional force [1m] b) Due to <u>water, there is less frictional force between the handle and holder to go against the weight of the mop,</u> [1m] causing gravity to pull the mop downwards. c) When there mop head is soak with <u>more mass of water, there is more gravitational force pulling the mop downwards</u> [1m] to <u>go against the same amount of frictional force between the handle and the holder,</u> [1m] hence causing the mop to fall towards ground.