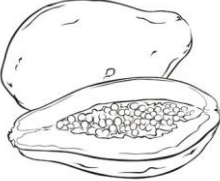
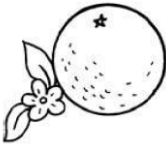
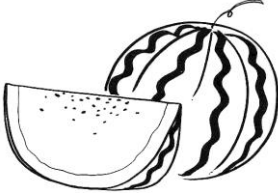
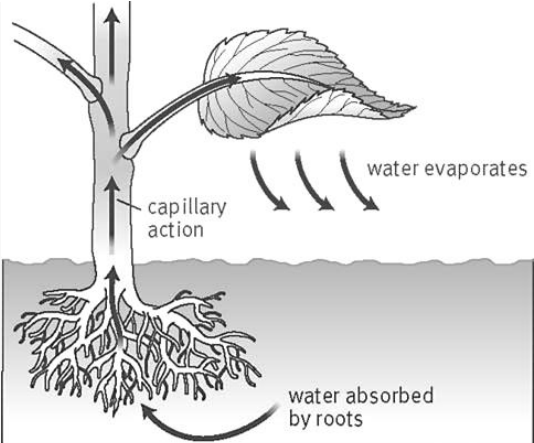
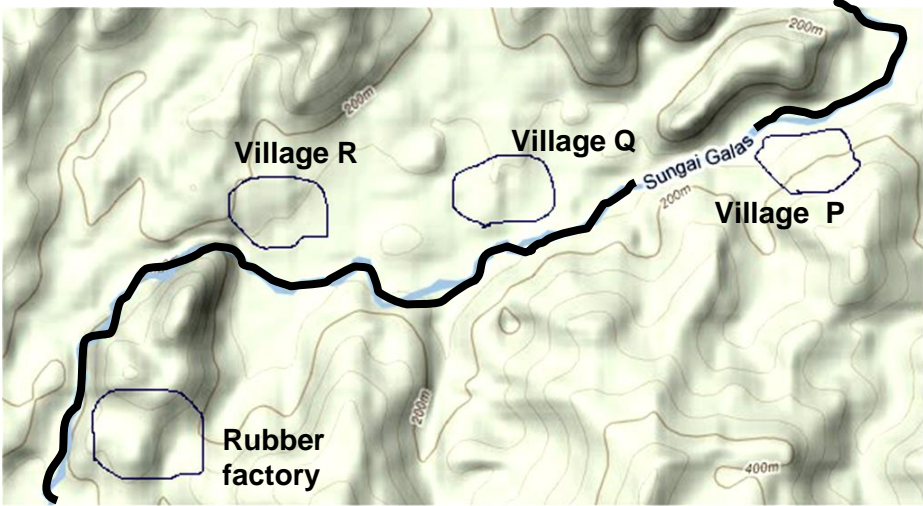


No.	Questions	Marks	Student notes
1.	<p>Diagram 2 shows three types of fruits.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Papaya <i>[Betik]</i></p> </div> <div style="text-align: center;">  <p>Orange <i>[Oren]</i></p> </div> <div style="text-align: center;">  <p>Water melon <i>[Tembikai]</i></p> </div> </div> <p style="text-align: center;">Diagram 2</p> <p>Plan a laboratory experiment to investigate the percentage of vitamin C content in each fruit. DCPIP (dichlorophenolindophenol) 0.1% solution is used to test the presence of vitamin C in the fruit juices.</p> <p>You can use the common chemicals and science apparatus that can be found in the laboratory. The planning of your experiment must include the following aspects:</p> <ul style="list-style-type: none"> <li>• Problem statement <i>[Peryataan masalah]</i></li> <li>• Hypothesis <i>[Hipotesis]</i></li> <li>• Variables <i>[Pembolehubah]</i></li> <li>• Apparatus and materials <i>[Radas dan Bahan]</i></li> <li>• Procedures <i>[Kaedah]</i></li> <li>• How data is communicated</li> </ul> <p style="text-align: right;">[17 marks]</p>		
2.	<p>A group of students did a study on the function of enzymes as an organic catalyst that can regulate and increase the rate biochemical reactions in the cell. Enzymes are very sensitive to a change in temperature and functions efficiently at an optimum temperature. Design an experiment to study the effect of different temperatures on the activity of salivary amylase on starch.</p> <p>The planning of your experiment must include the following aspects:</p> <ul style="list-style-type: none"> <li>• Statement of identified problem</li> <li>• Hypothesis</li> <li>• Statement of variables</li> <li>• List of materials and apparatus</li> <li>• Experimental procedure</li> <li>• Presentation of data</li> </ul> <p style="text-align: right;">[17 marks]</p>		

No.	Questions	Marks	Student notes
3.	<p>Human needs energy to maintain the body temperature at 37°C and to carry out daily activities.</p> <p>The energy is gain from oxidation of food in body cell respiration.</p> <p>Energy value is measured in Joule per gram unit.</p> <p>Base on the information; design a laboratory experiment to investigate the energy value in three types of food samples.</p> <p>Your experimental design should include:</p> <ul style="list-style-type: none"> <li>• Problem statement</li> <li>• Variables</li> <li>• Hypothesis</li> <li>• Material and apparatus</li> <li>• Procedures</li> <li>• Presentation of data</li> </ul> <p style="text-align: right;">[17 marks]</p>		
4.	<p>The activity of microorganisms is affected by abiotic component in habitat.</p> <p>Based on the above statement, plan an experiment to study the effect of light intensity on the activity of yeast.</p> <p>The planning of your experiment must include the following aspect:</p> <ul style="list-style-type: none"> <li>• Problem statement</li> <li>• Hypothesis</li> <li>• Variables</li> <li>• List of apparatus and material</li> <li>• Experimental procedure or method</li> <li>• Presentation of data</li> </ul> <p style="text-align: right;">[17 marks]</p>		
5.	<p>During vigorous exercise such as running, more sweat is produced and less urine is produced by individual.</p> <p>Design an experiment to study the effect of time of vigorous exercise on the volume of urine produce by a group of students. They are given same amount of water to drink before the exercise.</p> <p>Your plan must include the following aspects:</p> <ul style="list-style-type: none"> <li>• Problem statement</li> <li>• Statement of hypothesis</li> <li>• Variables</li> <li>• List Material and Apparatus</li> <li>• Experimental Procedure</li> <li>• How data communicated</li> </ul> <p style="text-align: right;">[17 marks]</p>		

No.	Questions	Marks	Student notes
6.	<p>The rate of photosynthesis is influenced by different environment factors.</p> <p>Base on the above situation; plan a laboratory experiment to determine the effect of light intensity on the rate of photosynthesis.</p> <p>The planning of your experiment must include the following aspects:</p> <ul style="list-style-type: none"> <li>• Statement of identified problem</li> <li>• Variables</li> <li>• Statement of hypothesis</li> <li>• List of materials and apparatus</li> <li>• Experimental procedure</li> <li>• Presentation of data</li> </ul> <p style="text-align: right;"><b>[17 marks]</b></p>		
7.	<p>The population of rats in a urban area and rural area can be estimated by a certain method.</p> <p>Based on the above statement, plan experiment for this purpose. The planning of your experiment must include the following aspects:</p> <ul style="list-style-type: none"> <li>• Problem statement</li> <li>• Hypothesis</li> <li>• Variables</li> <li>• List of apparatus and material</li> <li>• Experimental procedure or method</li> <li>• Presentation of data</li> </ul> <p style="text-align: right;"><b>[17 marks]</b></p>		
8.	<p>Transpiration is the lost of water vapour from plants, especially in leaves. Transpiration occurs 90 % through the stomata. The amount of water lost depends on its size, surrounding light intensity, temperature, humidity and air movement.</p>  <p>The diagram illustrates the process of water transport and transpiration in a plant. It shows a cross-section of a plant with roots in the soil, a stem, and a leaf. An arrow labeled 'water absorbed by roots' points upwards from the roots into the stem. Another arrow labeled 'capillary action' points upwards along the stem. From the leaf, three arrows labeled 'water evaporates' point away from the leaf surface, representing transpiration.</p>		

No.	Questions	Marks	Student notes
	<p>Base on the information; design an experiment to be conducted in the laboratory to investigate the effect of number of leaves on the rate of transpiration in hibiscus plant.</p> <p>The planning of your experiment must include the following aspects:</p> <ul style="list-style-type: none"> <li>• Problem statement</li> <li>• Hypothesis</li> <li>• Variables</li> <li>• Apparatus and materials</li> <li>• Procedures</li> <li>• How data is communicated</li> </ul> <p style="text-align: right;">[17 marks]</p>		
9.	<p>Competition is an interaction between organisms which live together in a habitat and compete for the same resources that are in limited supply. The competition between individuals of the same species is called an intraspecific competition.</p> <p>A farmer doesn't realized his mango trees do not produced high quantity of mangoes because the mango trees are planted too close to each other.</p> <p>Based on the above information and situation, design a laboratory experiment to show to the farmer on how the distance between the plants can affects the growth rate of a named plant.</p> <p>The planning of your experiment must include the following aspects:</p> <ul style="list-style-type: none"> <li>• Problem statement</li> <li>• Hypothesis</li> <li>• Variables</li> <li>• List of apparatus and materials</li> <li>• Experimental procedures</li> <li>• Presentation of data</li> </ul> <p style="text-align: right;">[17 markah]</p>		

No.	Questions	Marks	Student notes
10.	<p>Villages P, Q and R are situated along the Galas River as in Diagram 10.1. The village folks depend on the river to earn a living. The river provides them with transport, water for cooking, drinking, washing, etc. They also catch fish from the river.</p> <p>Lately the villages' folks are complaining about the lower catch from the river. They relate this problem to a rubber factory built two years ago at the upstream of the river. Village P, Q and R are 10km, 20km and 30km away from the rubber factory respectively.</p>  <p style="text-align: center;">Diagram 10.1</p> <p>As an Environment Department officer, you are sent to the site to make a thorough investigation into the matter. Your task is to investigate the effect of the distance of the rubber factory and the villages on the levels of water pollution.</p> <p>Your investigation must include the following aspect:</p> <ul style="list-style-type: none"> <li>○ Problem statement</li> <li>○ Hypothesis</li> <li>○ Variables</li> <li>○ List of apparatus and materials</li> <li>○ Experimental procedure or method</li> <li>○ Presentation of data</li> </ul> <p style="text-align: right;">[17 marks]</p>		