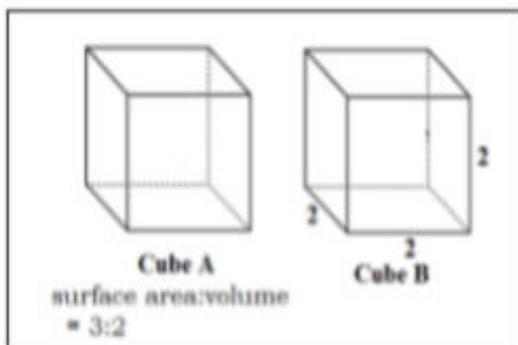


PENANG SANGAM HIGH SCHOOL
YEAR 11 BIOLOGY
SUPPLEMENTARY RESOURCES

Week 2

1. You are provided with two cubes, A and B. The surface area to volume ratio for cube A is 3:2 and the dimensions for cube B are provided below. (Note: the cubes are not drawn to actual size)

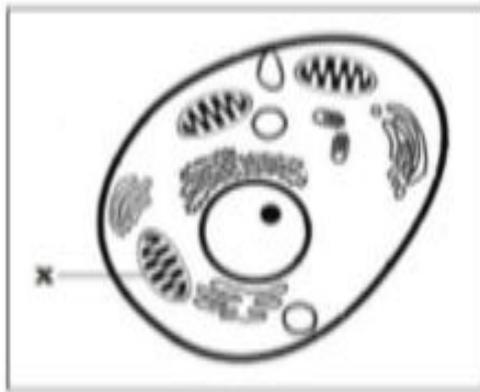


- (i) Calculate the surface area to volume ratio of cube B. (Show all working)
- (ii) Explain in which cube would diffusion occur at a faster rate.
2. A pupil wrote the following report of how he prepared an unstained slide of plant cells to view clearly under a school microscope. The epidermis from the storage leaf of an onion was peeled and placed carefully in the center of a clean microscope slide. The coverslip was gently lowered on this single layer of cells using a pencil. After placing the slide on the stage of the microscope which had adequate lighting, the cells were observed with low power magnification before turning to high power.
- (i) The pupil has missed out an important step. Identify the missing step.
- (ii) A stain is usually added to the specimen to help identify the different parts of a cell. Suggest a suitable stain that may be used for the cell.
3. (i) Samuel prepared a wet mount of onion leaf cells. What is a wet mount? (1 mark)
- (ii) State a precaution that needs to be followed when preparing a wet mount specimen of onion leaf cells.
4. To prepare a wet mount, Tomasi was given the following steps:
- A. Place slide on the microscope stage and focus to get a clear view.
- B. Clean a slide and cover slip.
- C. Add cover slip using a needle point as in diagram (below)
- D. Place sample in the centre of the slide.
- E. Add drop of water.



(i) Arrange steps (A-E) in their correct order.

5. For each of the following cell organelles, given their feature and/or function:
- Lysosomes
 - Chloroplast
 - Mitochondria
6. Study the diagram given below and use your knowledge to answer the questions that follow.



- Is the diagram above of a plant cell or animal cell?
- Give two reasons for your choice in (i) above.
- Give one function of organelle X

7. **Extended response question**

Cells are the smallest unit of life. With reference to the statement, briefly explain:

- any three organelles and their functions
- two differences between plant and animal cell