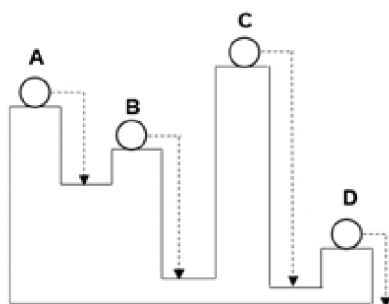


# VANDA SAMPLE QUESTIONS

Secondary 1 and 2

Question 1

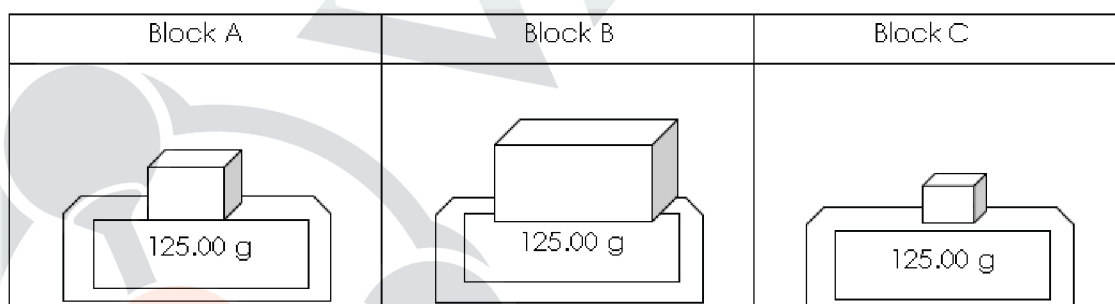
Four identical balls are rolled down from different heights as shown below. Select the ball that shows the least amount of energy transferred to another form.



- a) Ball A
- b) Ball B
- c) Ball C
- d) Ball D

Question 2

Three different blocks are placed on an electronic balance as shown below.

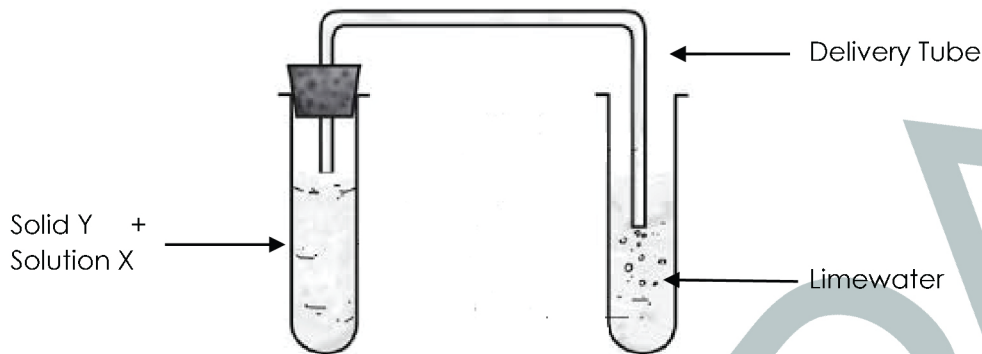


Which of the following statements is true regarding the blocks?

- a) All blocks have equal masses and equal densities.
- b) All blocks have unequal masses but equal densities.
- c) All blocks have equal masses but unequal densities.
- d) All blocks have unequal masses and unequal densities.

### Question 3

Solution X reacts with solid Y to form a gas. This gas is bubbled into limewater as shown below.

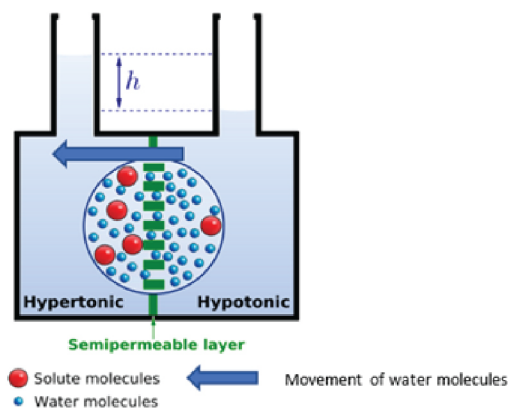


The limewater remains colourless at the end of the experiment. Which of the following statements are correct regarding the experiment?

- I The gas produced is carbon dioxide.
  - II The gas produced might be sulfur dioxide.
  - III The bubbles of gas indicate that a chemical change occurred.
  - IV The mass of solid Y and solution X would decrease at the end of the experiment.
- a) I only  
b) I and II only  
c) I, II and III only  
d) II, III and IV only

### Question 4

Osmosis is the movement of water molecules from a hypotonic solution, which consist of a region of higher water potential to a hypertonic solution, which consist of a region of lower water potential through a semipermeable membrane. This means that water always moves from a region where there are a greater number of water molecules to a region where there are fewer water molecules.



Based on the information given above, which of the following explains what happens when an individual stranded in a desert drinks too much salt water?

- a) The person becomes hydrated as water moves into the body cells of the individual.
- b) The person becomes hydrated as water moves out of the body cells of the individual.
- c) The person becomes dehydrated as water moves into the body cells of the individual.
- d) The person becomes dehydrated as water moves out of the body cells of the individual.

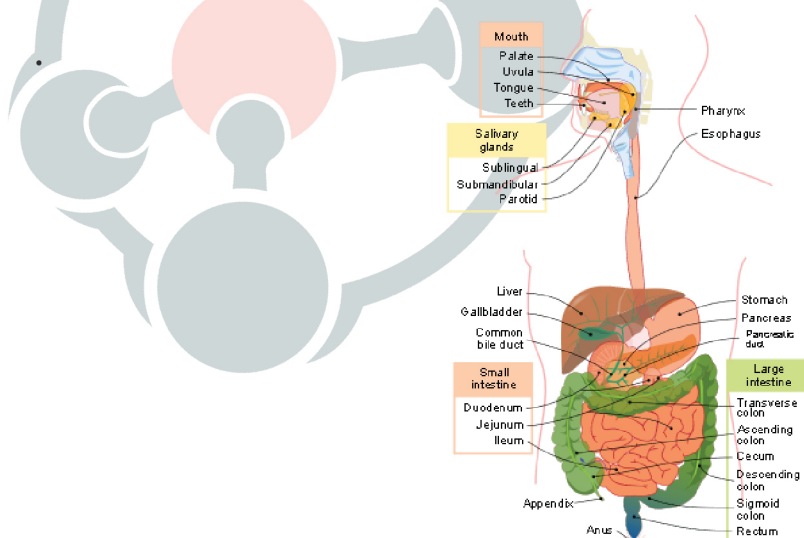
### Question 5

Which student's liquid took the longest to evaporate?

- a) Mary
- b) Cheryl
- c) John
- d) David

### Question 5

Bile is a yellowish green liquid produced by the liver and is stored in the gall bladder. Bile aids in the emulsification of fats. Emulsification is the process of physically digesting fat molecules into smaller pieces similar to the manner our teeth "chops up" food into smaller pieces. This physical process of digestion increases the surface area to volume ratio which enables these fat molecules to be chemically digested at a faster rate.



Which of the following is correctly describes what happens when a patient's gall bladder is removed?

- a) Bile is no longer produced, and fats cannot be digested both physically and chemically.
- b) Bile is no longer produced and fats can only be digested chemically, not physically.
- c) Bile is still produced directly by the liver resulting in a slower chemical digestion of fats.
- d) Bile is still produced directly by the liver resulting in a slower physical digestion of fats.

Ans: d,c,d,d,d

