I. Multiple choice questions

1. In respiration, energy comes from the
   A. burning of sugar in our body.   B. breaking down of food substances.
   C. breaking down of muscles.      D. breathing in oxygen.

2. Wires A, B, C, and D below are all made of the same metal. Which one will give the largest electric current when connected across XY in the circuit diagram shown below?
   
   ![Circuit Diagram]

   A. _______________
   B. _______________
   C. _______________
   D. _______________

3. Look at the circuit diagram on the right. Calculate the total voltage and determine the direction of the current.

   ![Circuit Diagram with Voltages]

   Voltage (V) | Direction
   ---------- |----------
   A          | 1        | Anti-clockwise
   B          | 1        | Clockwise
   C          | 5        | Anti-clockwise
   D          | 5        | Clockwise

4. The pH value of a weak acid is usually
   A. less than 2   B. between 3 to 6   C. between 8 to 11   D. greater than 12.

5. To identify whether a solution is acidic or not, we can use
   i) pH paper
   ii) universal indicator
   iii) blue litmus paper
   iv) our tongue to taste the solution

   A. (i) only   B. (i) and (ii) only   C. (i), (ii) and (iii) only   D. (i), (ii), (iii) and (iv)

6. Which of the following statements about neutral solutions is/are correct?
   i) They are neither acidic nor alkaline.
   ii) Their pH values are equal to 0.
   iii) They can be produced by the mixture of acids and alkalis.

   A. (i) only   B. (iii) only   C. (i) and (ii) only   D. (i) and (iii) only

7. When acids get into our eyes, we should immediately
   A. wash our eyes with water in the eye-wash bottle.
   B. neutralise by alkaline solution.
   C. clean our eyes with wet cloth.
   D. call the police.
II. Fill in the blanks
1. Light bulbs contain ____(a)__ which will not react with the filament when it is hot.
2. Gases pass through the walls between the air sacs and ____(b)__ by the process called ____(c)__. The advantage of having many air sacs in the lung is to increase the ____(d)__ (two words) for gaseous exchange.
3. ____(e)__ is the green substance in plant cells for carrying out the process of making food.
4. The temperature of the Earth is increasing because of the ____(f)__ (two words) effect.
5. An electric current is a flow of ____(g)__ that are ____(h)__ charged.
6. Metals are good ____(i)__ of electricity because they have low ____(j)__ and thus allow electric current to pass through easily.
7. We get electricity at home through the ____(k)__ (two words) to which an electrical appliance is connected by a ____(l)__.
8. At home, the switch box contains ____(m)__ instead of fuses as the safety device.

III. Structured questions
1. The following experiment was set up to investigate the conditions for photosynthesis. A green leaf was inserted into a flask containing soda lime. The setup was then placed under light for three hours. At the end of the experiment, the leaf was tested for the presence of starch and it was found that only region X contained starch while regions Y and Z did not.

   ![Diagram of a leaf with soda lime and light]

   (a) What is function of soda lime?
   (b) Describe how you would test the leaf for the presence of starch.
   (c) Explain why regions Z did not contain starch.
   (d) State the conclusion of the experiment.
   (e) Write a word equation for the process of photosynthesis.

2. Three circuits are connected as shown in the following diagrams. All the light bulbs are similar. In circuit I, a light bulb is connected in series with a single cell. It glows with 2A of current flowing through it.

   ![Diagrams of circuits I, II, and III]

   Circuit I  
   Circuit II  
   Circuit III

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(a) What is the current flowing through circuit II if two similar light bulbs are connected in series? Explain your answer.
(b) What is the current flowing through X in circuit III? Explain your answer.
(c) What happens to the cell in circuit III if more branches are added to the circuit?
(d) A copper wire is put across circuit II as shown in the diagram. What happens to the brightness of bulbs P and Q respectively? Explain your answer.

3. Amy is investigating the movement of objects of different shapes in oil. The following diagrams show the setup of her experiments. She puts the objects into the boiling tubes containing oil and measures the time taken for each to reach the bottom.

(a) State one controlled variable in order to ensure a fair test.
(b) Which object would you expect to take the shortest time? Explain your answer.

4. The bar chart below shows the braking distance (the distance moved by a car when the brake is pressed until it actually stops) for a car travelling at 15 metres per second on different roads.

(a) Which is the most dangerous combination of tyres and road surface?
(b) What is the braking distance in the case mentioned in (a)?
(c) It has been noticed that tyres on wet roads require longer braking distances than those on dry roads. Describe how water causes these results.

*** The End ***