

Total Marks: \_\_\_\_\_/40

Date: \_\_\_\_\_

**Maths**

1. (a) Work out  $\frac{9}{11} \div \frac{3}{4}$

Give your answer as a mixed number.

Answer: ..... (2)

(b) Work out  $5\frac{1}{4} - 2\frac{3}{7}$

Give your answer as a mixed number.

Answer: ..... (3)

2. Mortar is made from lime, cement and sand.  
The ratio of their weights is 1:2:6

Work out the weight of lime and cement in 54kg of mortar.

Lime: .....  
Cement : ..... (3)

3. Solve the equation  $x^2 - 2x - 35 = 0$

Answer: ..... (3)



**Biology**

4.

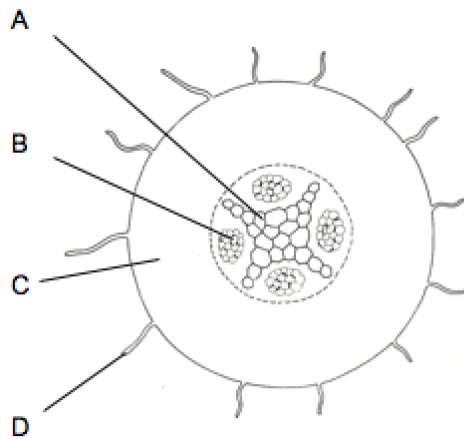


Figure 1

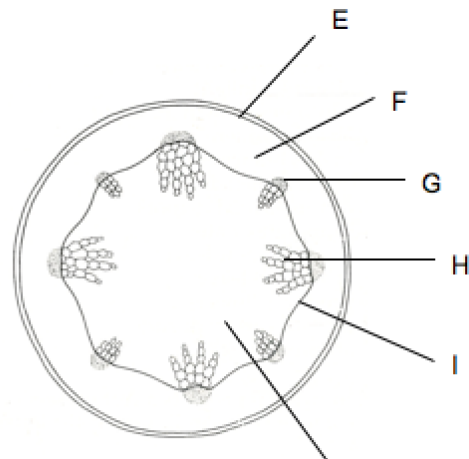


Figure 2

(a) The diagrams above represent transverse sections through a root and a stem.

(i) Which figure represents the stem?

Answer: ..... (1)

(ii) Name two features which allow you to identify the root:

(2)

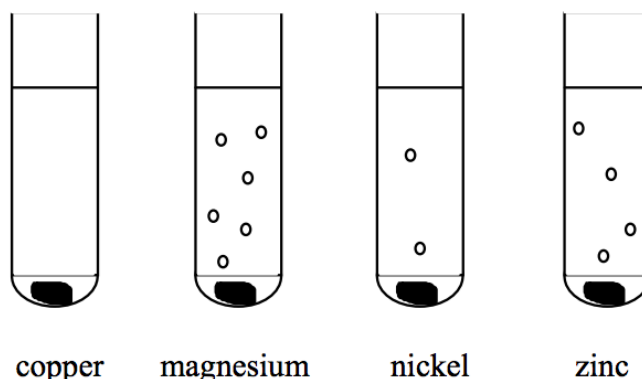
(b) Use the names from the following list to identify the organs represented by the letters A-J. You can use the terms more than once or not at all.

- |         |           |           |           |         |
|---------|-----------|-----------|-----------|---------|
| Cortex  | Epidermis | Cell Wall | Root Hair | Phloem  |
| Nucleus | Xylem     | Pith      | Sap       | Cambium |

- A: ..... (5)  
 B: .....  
 C: .....  
 D: .....  
 E: .....  
 F: .....  
 G: .....  
 H: .....  
 I: .....  
 J: .....

**Chemistry**

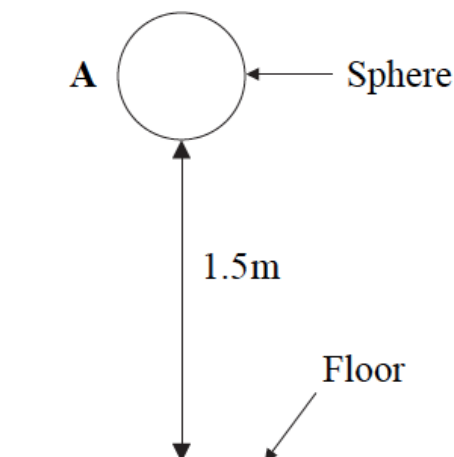
5.



- Small pieces of copper, magnesium, nickel and zinc were placed in test tubes containing dilute hydrochloric acid. The above was observed.
- (a) Using the above observations, list the four metals in order of reactivity. (2)  
Most reactive: .....  
.....  
.....  
Least reactive: .....  
.....
- (b) (i) Which gas was produced in the above reactions? (1)  
(ii) Describe the test and result you would use to identify this gas (2)
- (c) The reaction between the metals and the hydrochloric acid also produces a chemical compound called a salt.  
(i) What is the name of the salt formed in the reaction between magnesium and hydrochloric acid? (1)  
(ii) Write the symbol equation for this reaction. (2)  
(iii) What type of bonding is present in this salt? (1)  
(iv) This salt is a solid at room temperature. Explain why a salt has a high melting and boiling point. (2)

**Physics**

6.



A sphere of mass 7.0kg is raised a distance 1.5m above the floor to position A as shown in the diagram above.

- (a) Name the type of energy possessed by the sphere at A. (1)
- (b) Calculate the amount of this type of energy possessed by the sphere at A. (3)  
Assume that the acceleration freefall,  $g=10\text{m/s}^2$
- (c) The sphere is now dropped onto the floor. Name the type of energy that the sphere possesses just before it strikes the floor. (1)
- (d) What speed is the sphere travelling just before it strikes the floor? (3)
- (e) If the height of the drop is now doubled, will the speed of the sphere just before striking the floor also double? Explain your answer. (2)