Practice Question Set For A-Level
Subject : Biology
Paper-1 Topic: 2 Cells

Merit Minds
www.merit-minds.com
Exam Preparation and Free Resources

Name of the Student:_____
Max. Marks : 25 Marks **Time : 25 Minutes**

Q1.

(a) Describe how a sample of chloroplasts could be isolated from leaves.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

(4)

(b) Scientists grew two groups of plants:

- control plants with all the inorganic ions needed
- iron-deficient plants with all the inorganic ions needed **but** without iron ions.

After 1 week, the scientists measured the mass of protein and the mass of chlorophyll in the chloroplasts isolated from samples of leaves of these two groups of plants.

The table below shows the scientists' results.

Mass of protein / percentage of control	Mass of chlorophyll / percentage of control
40	10

Some proteins found inside the chloroplast are synthesised inside the chloroplast.

Give **one** feature of the chloroplast that allows protein to be synthesised inside the chloroplast

Downloaded from www.merit-minds.com

and describe **one** difference between this feature in the chloroplast and similar features in the rest of the cell.

Feature _____

Structural difference _____

_____

(2)

(c) The ratio of protein to chlorophyll in control plants is 9:1

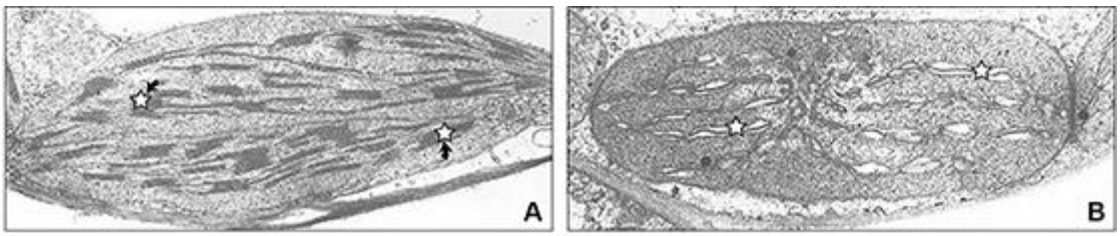
Use the information in the table above to calculate the ratio of protein to chlorophyll in iron-deficient plants.

Ratio _____

(1)

(d) The scientists also observed the chloroplasts from the samples of leaves using an electron microscope.

The figure below shows a chloroplast from a control plant (image **A**) and a chloroplast from an iron-deficient plant (image **B**).



Key

☆ Thylakoid membranes inside the chloroplast

Use the figure above to suggest why iron-deficient plants have a reduced growth rate.

_____

_____

_____

_____

_____

_____

Downloaded from www.merit-minds.com

_____

_____

_____

(3)

(Total 10 marks)

Downloaded from www.merit-minds.com

Q2.

(a) Describe the structure of DNA.

(5)

(b) Name **and** describe **five** ways substances can move across the cell-surface membrane into a cell.

(5)

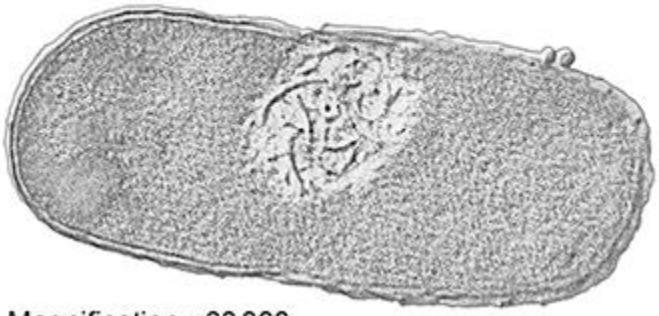
The figure below shows transmission electron micrographs of two cells, one animal cell and one prokaryotic cell.

Downloaded from www.merit-minds.com

Cell A



Cell B



Magnification ×60 000

(c) Contrast the structure of the two cells visible in the electron micrographs shown in the figure above.

(5)

(Total 15 marks)

Downloaded from www.merit-minds.com