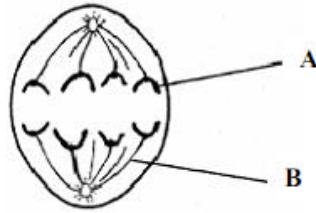**Name:** _____

Q.1

The diagram shows a cell undergoing cell division.

(a) Genes are found on structure A. Name structure A.

_____

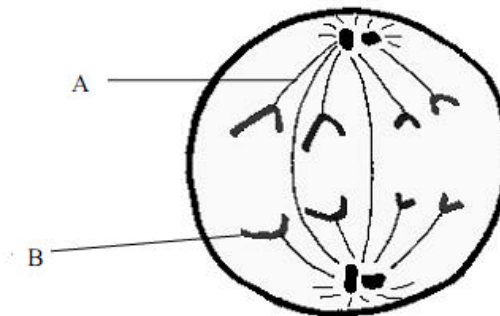(b) What is the function of structure B?

_____

(c) Tissues grow by cell division. Name the type of cell division by which tissues grow.

_____

(d) Organs are found in both plants and animals. What is meant by the term *organ*?

_____

(e) Name **one** organ found in plants.

_____

Q.2

The diagram shows a stage of mitosis.

(a) Name this stage of mitosis. _____

(b) Give a feature from the diagram which allowed you to identify this stage.

_____

(c) Name the parts of the diagram labelled A and B.

A. _____

B. _____
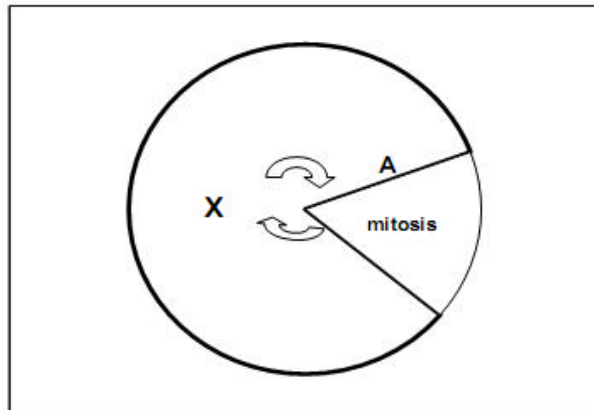
(d) What is the function of mitosis in single-celled organisms? _____

(e) Give **one** function of mitosis in multicellular organisms. _____

(f) Give **one** location where mitosis occurs in flowering plants. _____

Q.3

The diagram represents the cell cycle.

(a)   What stage of the cycle is represented by X? ……………………………………………………..

(b)   Give the names of the two processes involving DNA which take place during stage X.

        1…………………………………………………….. 2 …….……………………………………..

(c)   For convenience of study, mitosis is divided into four stages. List these in order starting at A.

        …………………………………………………………………………………………………

(d)   In which of the stages of mitosis that you have listed in (c) would you expect to see the spindle

        fibres contracting? …………………………………………………………………………….

(e)   Explain the term diploid number ……………………………………………………………….

        …………………………………………………………………………………………………

(f)   What term is used to describe a group of disorders of the body in which cells lose the normal

        regulation of mitosis? ………………………………………………………………………….

Q.4

Tissue culture can be used to grow new tissues in the laboratory.

(i)   What is a tissue?

(ii)   Name a gas that would be needed for the growth of tissue in the laboratory.

(iii)   Why are sterile conditions needed to grow the tissue?

(iv)   What type of cell division, mitosis or meiosis, is involved in tissue culture?

(v)   What medical term is used to describe the disease caused by uncontrolled mitosis in human cells?

(vi)   Give **two** causes of this uncontrolled cell division.

(vii)   Draw a labelled diagram to show the normal cell cycle.

(viii)   What is the function of meiosis?

(i) _____

(ii)_____

(iii)_____

(iv)_____

(v)_____

(vi)_____

(vii) Labelled Diagram

(viii)_____

Normal Cell Cycle