



Biology Leaving Certificate Higher Level

Past Exam Questions on:

Cell Division

Q11 2013

(c) Answer the following questions, which relate to events in the cell cycle.

- (i) What name is applied to the period of the cell cycle in which division is **not** taking place?
- (ii) Give a cellular process that occurs during this period in which the nucleus is not dividing.
- (iii) Draw a labelled diagram to show the position of the chromosomes during metaphase of mitosis in a nucleus in which $2n = 6$.
- (iv)
 1. State a function of one of the structures, other than chromosomes, that you have labelled in your diagram of metaphase.
 2. How does the structure carry out this function?
- (v) What term is used for the group of disorders in which control has been lost over the rate of mitosis?

Q13 (c)(iii) 2013

(c) Answer the following questions in relation to the development of a human zygote.

- (i) By which type of cell division does the zygote divide?
- (ii) Further divisions result in the formation of a morula. What is the next developmental stage after the morula?

Q 2 2011

2. Use your knowledge of mitosis to answer the following questions:

(a) What is the role of mitosis in single-celled organisms?

(b) What medical term is used for the group of disorders in which certain cells lose normal control of mitosis?

(c) Suggest a possible cause of one of the group of disorders referred to in (b).

(d) Name the stage of mitosis in which the chromosomes are located at the equator of the cell and before they begin to separate.

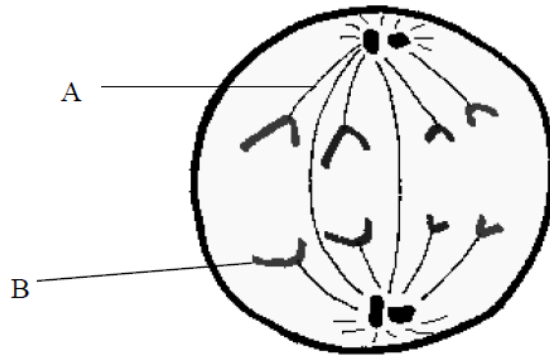
(e) To what are the chromosomes attached in the stage of mitosis referred to in (d)?

(f) Towards the end of mitosis, in what type of cell does a cell plate form?

(g) Give **one** way in which mitosis differs from meiosis.

Q 5 2009

5. The diagram shows a stage of mitosis.



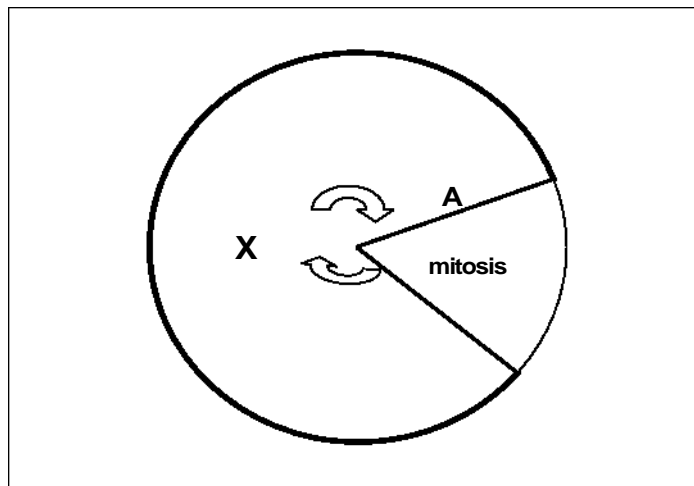
- (a) Name this stage of mitosis. _____
- (b) Give a feature from the diagram which allowed you to identify this stage.

- (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. _____

Q2 2008

2. The diagram represents the cell cycle.

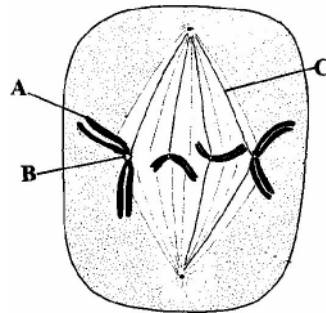
- (a) What stage of the cycle is represented by X?
- (b) Give the names of the two processes involving DNA which take place during stage X.
1..... 2
- (c) For convenience of study, mitosis is divided into four stages. List these in order starting at A.
- (d) In which of the stages of mitosis that you 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?

Q3 2007

3. Study the diagram of a stage of mitosis in a diploid cell and then answer the questions below.



- (a) Name A, B and C.
A B C
- (b) What stage of mitosis is shown?
Give a reason for your answer.
- (c) What is the diploid number of this nucleus which is undergoing mitosis?
- (d) Give a role of structure A.
- (e) Some cells in the human body undergo meiosis. Give one function of meiosis

Q5 2005

5. (a) In the space below draw a diagram of a nucleus during metaphase of mitosis where $2n = 6$.
Label the spindle and a centromere in your diagram.
- (b) State a function of mitosis in a single-celled organism.
- (c) State a function of mitosis in a multicellular organism.
- (d) State one way in which mitosis differs from meiosis.

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- (b) When the normal control of mitosis in a cell is lost, cancer may result. Suggest **two** possible causes of cancer.

- 1.
- 2.