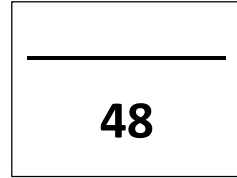


Mitosis Assignment

Multiple Choice (6 Marks)



- Which of the following events do NOT occur in prophase of mitosis?
 - DNA condenses to form chromosomes
 - Nuclear membrane begins to break down
 - Centrioles become visible
 - Spindle fibers contract
- The spindle fibers attach to chromosomes by a structure called:
 - Centrioles
 - Centrosomes
 - Centromere
 - Nucleus
- Humans have how many pairs of chromosomes
 - 1
 - 2
 - 10
 - 23
 - 46
- Which of the following is true regarding interphase?
 - The cell divides
 - It is the longest phase of the cell cycle
 - Chromatids separate during this phase
 - Once the cell reaches this phase, it will no longer divide
- During which phase of the cell cycle does growth occur?
 - Anaphase
 - Interphase
 - Metaphase
 - Prophase
 - Telophase
- During which phase of mitosis would you expect to see chromosomes consisting of sister chromatids within the nucleus?
 - Telophase
 - Metaphase
 - Anaphase
 - Prophase

Short Answer (31 Marks)

1. What are 2 reasons why cells need to undergo mitosis?

i. _____

2 ii. _____

2. Place the stages of the cell cycle in order

i. _____

ii. _____

5 iii. _____

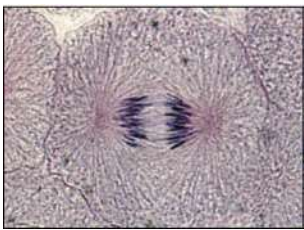
iv. _____

v. _____

3. How do the daughter cells compare to the parent cell? (*Be specific*)

2

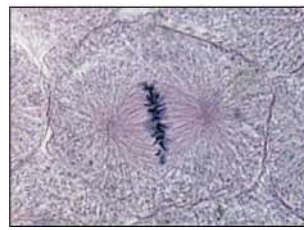
4. Identify the stage that each of the following cells is currently undergoing



a) _____



b) _____

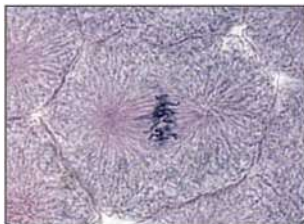


c) _____



d) _____

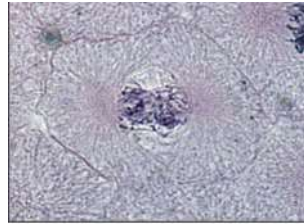
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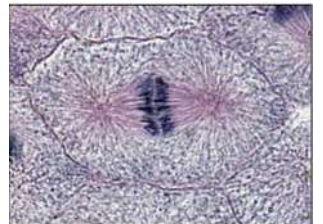
e) _____



f) _____

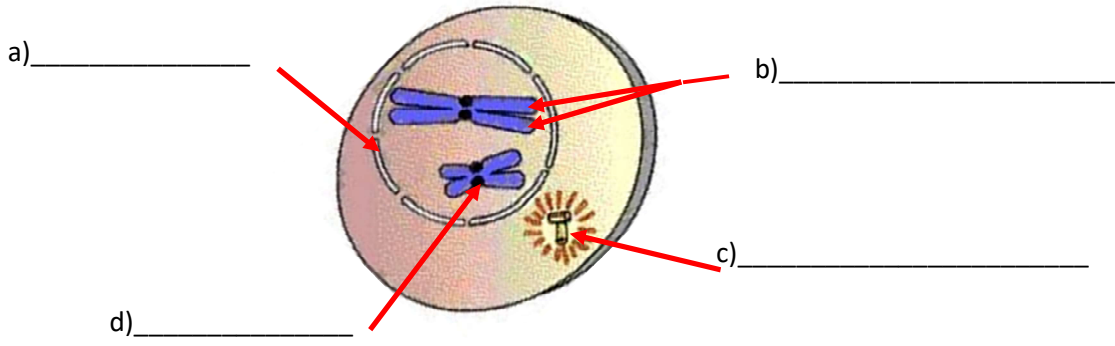


g) _____

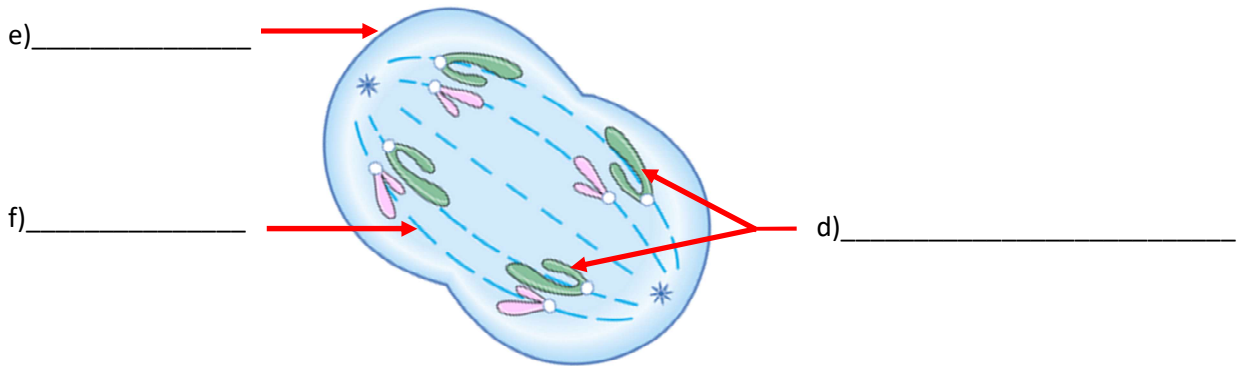


h) _____

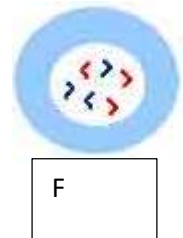
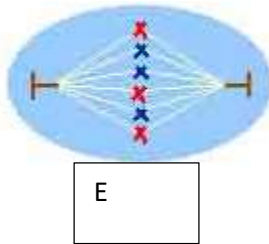
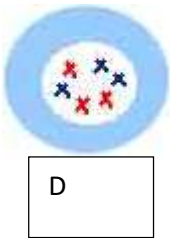
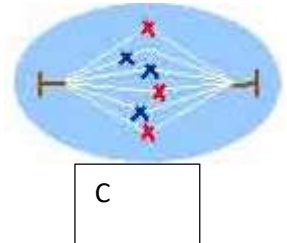
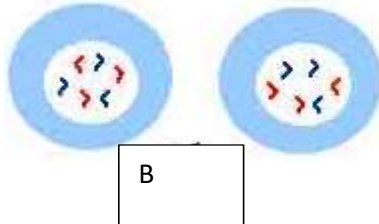
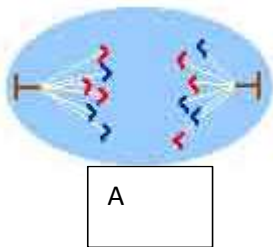
5. Label the parts shown in the diagrams below



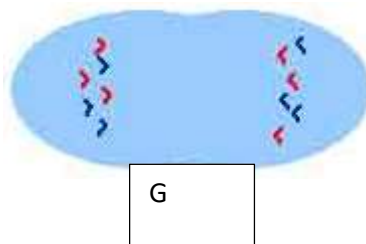
7



6. Number the following pictures in order



7



Extend your Thinking (11 Marks)

Your answers must use full sentences for this section

1. A scientist studying a group of cells notices that when the cell cycle is complete, half of the daughter cells have no chromosomes and the other half have 92 chromosomes. In what phase of mitosis did an error most likely occur? Explain

3

2. Some drugs that combat cancer inhibit mitosis. What effect might this have on healing times when you have an injury? Explain

2

3. At which time of year would mitosis in a plant occur most frequently? Explain why?

2

4. The process of telophase between plant and animal cells is slightly different. Plants create a cell wall between the two new sister cells, while animal cells pinch in the center to create the two sister cells. Hypothesize why there is this difference between the two types of cells.

4