

## M3 Science Semester 1, Midterm Exam Review

1. What is a cell?

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2. Why are cells important?

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3. What are three functions of cell division?

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

4. What is the scientific name of cell division?

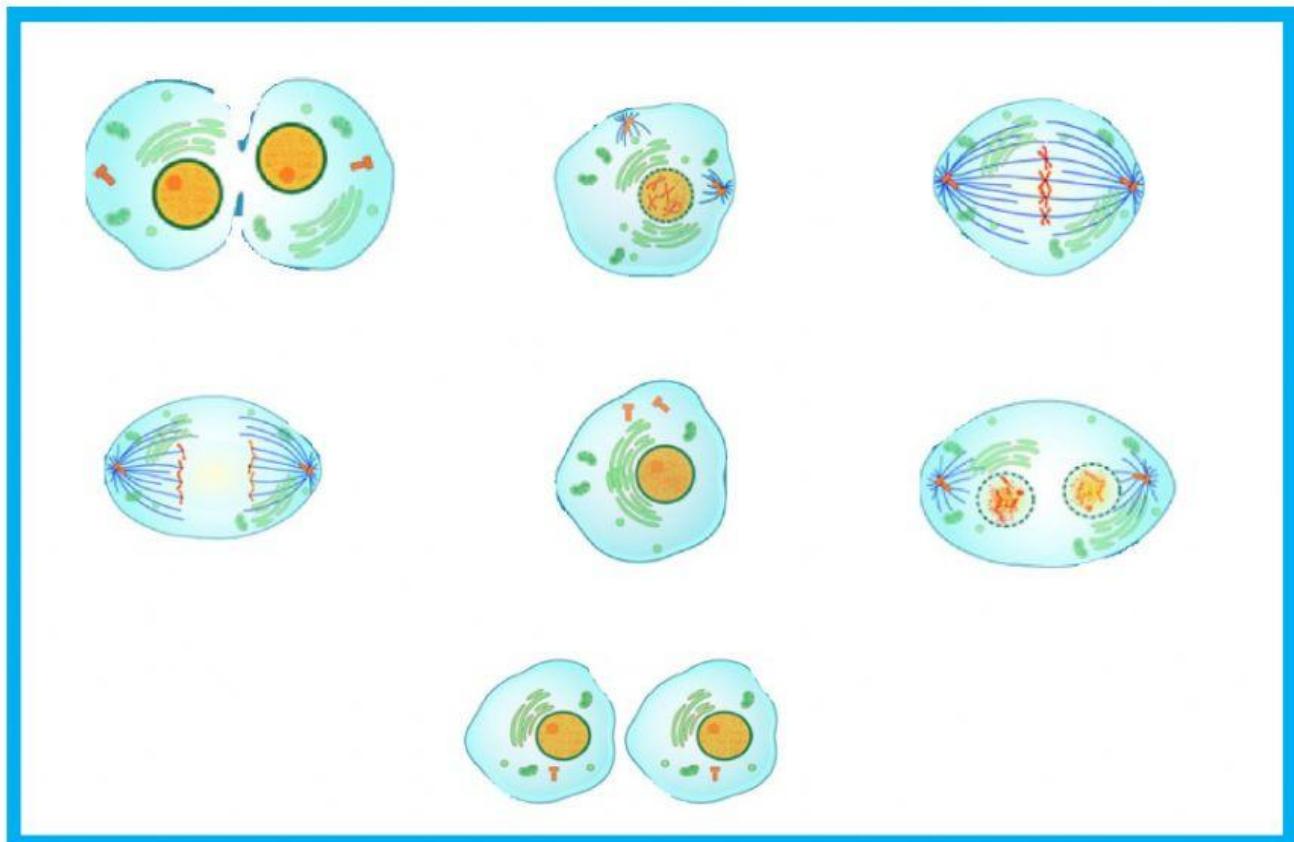
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5. Draw three different examples of things that use cell division.

6. Describe and draw each stage of mitosis.

For each stage of the cell cycle, draw a cartoon and briefly explain what happens.

<u>Interphase</u>	<u>What Happens?</u>
<u>Prophase</u>	<u>What Happens?</u>
<u>Metaphase</u>	<u>What Happens?</u>
<u>Anaphase</u>	<u>What Happens?</u>
<u>Telophase</u>	<u>What Happens?</u>
<u>Cytokinesis</u>	<u>What Happens?</u>



**DNA is replicated.** The cell spends most of its time here.

**Chromatin are formed.** Nucleolus starts to disappears.

**Nucleus dissolves.** Chromosomes move to the center.

**Chromosomes break and chromatids moved to opposite ends of cells.**

**Chromosomes break and chromatids moved to opposite ends of cells.**

**Nuclear envelop appears.**  
Chromosomes are at opposite site.

**This is the division of the cytoplasm.** Two daughter cells are formed.

7. Define meiosis and state the number of cells it produces.

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8. How many chromosomes does the average human have?

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9. What is the difference between homozygous and heterozygous?

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10. What are genes? Where do we get them from?

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11. What is phenotype?

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12. What is genotype?

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13. A) The offspring of the P generation are called \_\_\_\_\_

B) Complete the chart below. Simon crossbreeds a purebred tall-stemmed plant with a purebred short-stemmed plant.

	Generation	Type of Stem
	F1 Generation	
	F2 Generation	

C) A \_\_\_\_\_ is a factor that controls a trait.

D) \_\_\_\_\_ are different forms of genes.

E) A \_\_\_\_\_ allele is one whose traits always shows up in an organism.

F) A \_\_\_\_\_ allele is hidden whenever the dominant allele shows up.

G) If plants inherit one dominant allele and one recessive allele, this plant will be \_\_\_\_\_.

14. A) Who was Gregor Mendel and why was he famous?

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15. Complete the table below:

Name	Oviparous	Hermaphrodites	Marsupials	Viviparous
Meaning				

16. In humans, being a tongue roller (R) is dominant over non-roller (r). A man who is a non-roller marries a woman who is heterozygous for tongue rolling.

What is the genotype and phenotype of the father and mother? Draw a Punnett square to show the results of a crossing between the parents.

17.

A) What is the menstrual cycle?

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B) How long does a normal menstrual cycle last?

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C) If an egg is not fertilized, what happens to it?

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18. Define genetic disorders and give three examples.

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19. Briefly explain the concept of cloning.

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