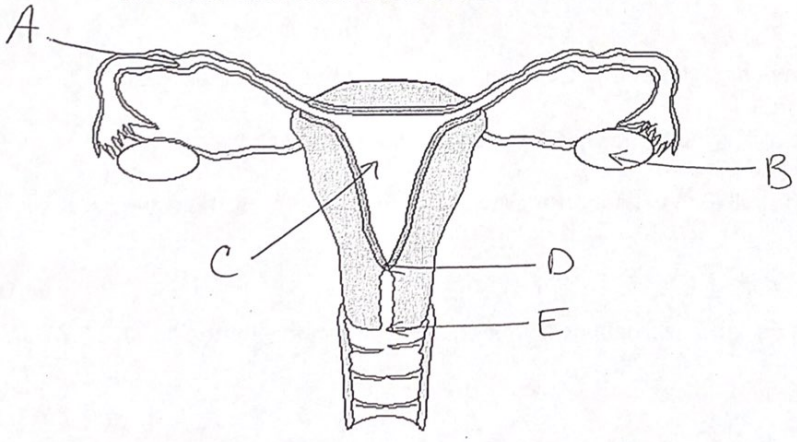
Review for the Biology EOC

1. List the 3 parts of the cell theory.
2. What is the difference between a theory and a law?
3. Compare and contrast plant and animal cells.
4. Compare prokaryotic cells with eukaryotic cells? Give examples.
5. What goes through replication during synthesis? Why does it replicate?
6. Make a chart comparing Mitosis and Meiosis.
7. List the stages of Mitosis in order and describe what happens in each.
8. List the stages of meiosis in order. Describe the daughter cells compared to the parent cell at the end of meiosis II.
9. When does crossing-over of homologous chromosomes occur and what does it give the organism/population?
10. What causes cancer? Describe what is not functioning properly.
11. Write the photosynthesis equation and describe what species goes through photosynthesis. Give the reactants and products.
12. Describe the relationship between cellular respiration and photosynthesis.
13. What happens if glycolysis is followed by anaerobic conditions? List two types.
14. What happened if glycolysis is followed by aerobic conditions? What is made?
15. Define gene mutations and tell how it can affect an organism.
16. What is the goal of cellular respiration?
17. What is an enzyme and what does it do for the organism? How is this possible? What two things affect the enzyme reaction rate?
18. Define the following properties of water: Cohesive behavior, solvent, expands upon freezing and high heat specificity. Give examples of each.
19. Describe the Miller – Urey experiment and how it explains how life began on Earth.
20. Explain the 5 things that provide evidence of evolution. Be specific and give examples.
21. How and why has the classification system changed since the 1800s and will it remain the same forever?

22. List the classification system starting with the broadest to the smallest.
23. List the 3 domains and put the corresponding Kingdoms under each. Give distinguishing characteristics of each Kingdom.
24. Define genetic drift and explain how it impacts a species and ecosystem.
25. How can gene flow positively and negatively impact ecosystems at the same time?
26. Give an analogy of gene flow in your daily life.
27. What ways can genetic diversity (variation) be increased in a population? List and explain each.
28. A red flower and a white flower are crossed and all pink flowers appear in the F_1 generation. What pattern of inheritance is shown and give the genotype and phenotype ratios for the F_2 generation? Show your work.
29. A speckled black and white chicken is what pattern of inheritance? Define the term and give another example.
30. A woman is a carrier for hemophilia which is a sex-linked recessive trait. She marries a man that is normal. What is the % of their offspring will have hemophilia? What % of their daughters will have hemophilia?

ORGANISMS, POPULATIONS AND ECOSYSTEMS

1. What are **cones** in plants and what are they used for?
2. What are **seeds** and how are they made and used in plant reproduction?
3. Which location in plants (structural) does photosynthesis happen?
4. What are the functions of the xylem and the phloem and where do they originate and move materials?
5. List the structures that play a part in plant reproduction.
6. Draw a sketch of the brain and label the following lobes: frontal, parietal, temporal, occipital.
7. What are super bugs and how can bacteria develop antibiotic resistance? Be specific.
8. Name the 5 types of pathogens that cause disease. How are they treated?
9. Name at least 3 impacts that biotechnology has on the environment.
10. Label the letter with the corresponding female reproductive structure:
    a. Ovary, vagina, fallopian tube, uterus, cervix
    b. Order from fertilization to birth?



11. What does it mean to have met your carrying capacity? Give an example.
12. What are the two types of ecological succession, if they develop from bare rock or from intact soil, and some examples of the events that cause each type.
13. Name the three density-dependent limiting factors that decrease populations and give an example of each.

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15. Explain what happens in the carbon cycle. What about the water cycle?
16. Draw a food web with the following animals:
    a. Snake, alligator, crane, hawk, fish, plankton, sea grass, algae, mosquitos, frogs
17. With the organisms listed in your food web, label them below with their corresponding trophic levels from producer to tertiary consumers.
18. What is the difference between renewable resources and non-renewable resources and why is it beneficial to use more renewable resources?
19. How does using non-renewable resources contribute to a human impact of global climate change and a reduction on biodiversity? Give an example.
20. What happens to these patients blood pressure in each of the following: (increase, decrease or stay the same)
    a. A patient has very high cholesterol levels and plaque build-up in their arteries.
    b. A patient has a high salt diet which increases their blood volume.
    c. A patient has vasodilation in their arteries with a normal amount of cholesterol and is a non-smoker.
21. Which type of immune response will happen if your body gets infected with the flu virus? What will happen next in your body?
22. Which type of immune response will happen if you get a paper cut? What types of things happen next in response to these pathogens trying to enter?
23. How do vaccines work and why can we not use them against bacterial infections? (Be specific on how your immune system reacts to these vaccines).