**REPRODUCTION STUDY GUIDE**

**Steps for studying**

1. Re-read your Student Notes
2. Be able to define the key vocabulary from the chapters. (Make vocab cards)
3. Complete the Study guide questions. Remember these questions can be used to guide you studying but is not include everything from the notes. You should still look at your notes as well as the study guide.

**Cell Organelles, DNA and Protein Synthesis**

Be able to define the following terms:

* **Sustainability**
* **Reproduction**
* **Continuity**
* **Prokaryotic**
* **Eukaryotic**
* **Organelle**
* **Ribosomes**
* **Proteins**
* **Endoplasmic reticulum**
* **Nucleus**
* **Nuclear membrane**
* **Nucleolus**
* **Deoxyribonucleic acid**
* **Chromatin**
* **Chromosomes**
* **Nitrogenous bases (nucleotides)**
* **Genes**
* **Cellular Membrane**
* **Cytoplasm**
* **Mitochondria**
* **Golgi Body**
* **Vesicles**
* **Vacuoles**

**Cell Cycle and Mitosis**

* **Cell cycle**
* **Interphase**
* **Mitosis**
* **DNA Replication**
* **Sister chromatids**
* **Centromere**
* **Spindle fibres**
* **Centrioles**
* **Prophase**
* **Metaphase**
* **Anaphase**
* **Telophase**
* **Cytokinesis**
* **Parent cell**
* **Daughter cell**

**Asexual Reproduction**

|  |  |  |
| --- | --- | --- |
| * **binary fission** | * **budding** | * **spores** |
| * **vegetative propagation** | * **artificial vegetative propagation** | * **clones** |
| * **sporangium** |  |  |

**Meiosis**

* **Sexual reproduction**
* **Genetic diversity**
* **Diploid number**
* **Haploid number**
* **Gametes**
* **Sperm cells**
* **Egg cells**
* **Fertilization**
* **Zygote**
* **Meiosis**
* **Homologous chromosomes**
* **Crossing over**
* **Independent assortment**

**Cell Organelles and DNA**

1. Describe the structure and composition of DNA.
   1. What is the function of DNA?
2. Describe the specific arrangement of DNA base pairs.
3. What is chromatin?
4. Describe the relationship between DNA, chromatin and chromosome.
5. How many chromosomes are there in most human cells?
   1. How are these chromosomes arranged?
6. Do all living things have the same number of chromosomes?
   1. Give examples to support your answer
7. What are genes?
   1. Where are they located?
   2. What are their functions?

**The Cell Cycle and Mitosis**

1. Describe the three stages of the cell cycle.
   1. Draw and properly label a diagram to show these three stages.
2. What happens during interphase?
   1. Briefly describe the three events that take place during interphase.
3. What is the end result of DNA replication?
   1. Why is DNA replication important?
4. What is the role of the centromere?
5. What is the purpose of mitosis?
   1. Draw a diagram to show the phases of mitosis. Describe what is happening in each phase.
   2. What is the result of mitosis?
6. What happens during the final stage (cytokinesis) of the cell cycle?

**Asexual Reproduction**

1. How many parents are required for asexual reproduction?
2. Describe each of the four types of asexual reproduction (binary fission, budding, spores, vegetative reproduction)

**Meiosis**

1. Briefly differentiate asexual reproduction from sexual reproduction
   1. What some advantages and disadvantages of each?
2. What causes genetic diversity? What are the possible impacts of genetic diversity to an organism?
3. Compare and contrast mitosis and meiosis
   1. Think about what the daughter cell looks like, how stages unfold, the purpose etc.
4. What is the role of gametes in reproduction?
5. Draw and properly label a diagram to illustrate the process of meiosis.

a. Briefly describe what happens in meiosis I.

b. Briefly describe what happens in meiosis II.

1. Compare the daughter cells in meiosis to the parent cell.
2. What is crossing over? When does it occur?
3. What is independent assortment? When does it occur?