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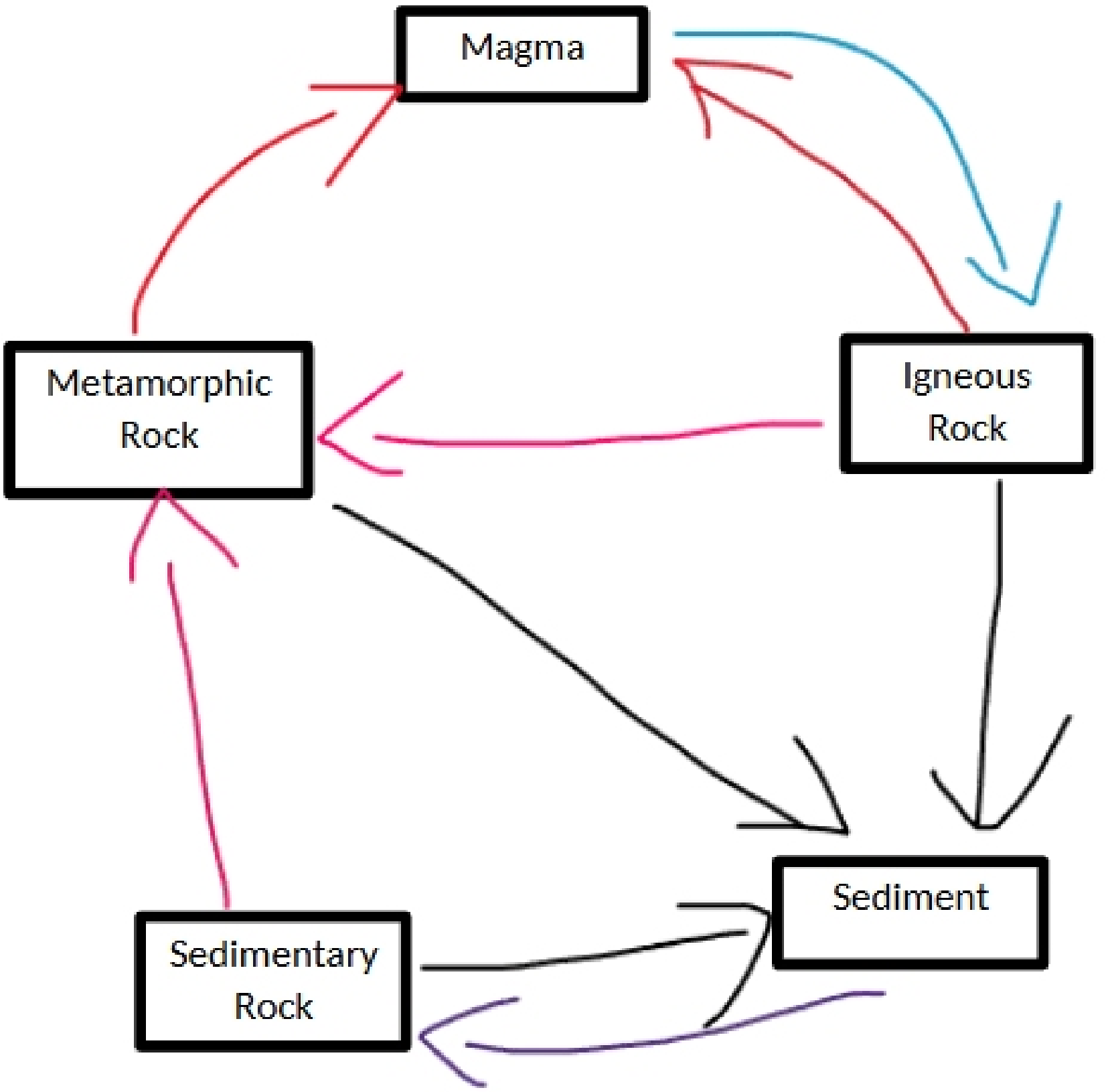
GEOL 1010 – Section 002
Homework Assignment 1
Due Date: September 2, 2021 11:59PM

Part I: What is the Rock Cycle?

On the diagram below, complete the rock cycle flow chart using arrows to show how each material/product in the boxes transforms from one to the other. The different processes are listed on page 2. Some processes on pp. 2 are missing definitions which you will be filling in in Part II. In other words, what process turns magma into igneous rock? Think of ALL the processes that can occur. If you can, use a different color for each rock type and process (see pp. 2), draw arrows between the products to represent the processes. Label the arrows with the appropriate process(es) using the text function. Don't forget the transformations or processes that result in the same product (15 points).

Red: melting Blue: cooling Pink: heat/pressure Black: erosion/weather Purple: cementation



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Part II: Definitions: Please fill in the missing definitions. You can fill in the table or use the next page (5 points).

Process(es)	Textbook pg.	What happens?
BURIAL (deep)		Rocks are buried by the deposition of younger, overlying rocks, or by plate tectonic processes. Associated with METAMORPHISM.
BURIAL (shallow)		Rocks are buried by the deposition of younger, overlying rocks. Associated with COMPACTION and CEMENTATION.
CEMENTATION	Chapter 5	Define: the binding together of particles or other things by cement
COMPACTION	Ch. 5	The deposition of rock layers above puts pressure on deeper sediments, causing the grains to be pushed closer and closer together, and reducing pore space between sedimentary grains.
CRYSTALLIZATION	Chapter 4	Define: the process in which crystals are formed either from something that has been melted or from a solution
DEPOSITION		Sediments cease moving, and are buried by other sediments.
ERUPTION	Chapter 4	Magma erupts into the atmosphere or water at Earth's surface, transforming into solid (igneous) rock. Elements and molecules in the magma combine into distinct mineral crystals.
EROSION	Chapter 5	Define: the process of eroding or being eroded by wind, water, or other natural agents
EXHUMATION		Solid rocks (formerly buried deep under the Earth's surface) are brought to the surface by the removal of overlying rocks.
MELTING	Chapter 4	Define: becoming liquified by heat
METAMORPHISM	Chapt. 6	Increased heat and/or pressure, associated with DEEP BURIAL and/or contact with hot magma. Rock is NOT melted, but elements and molecules can recombine to form new minerals while the rock remains in a solid state.
SUBDUCTION	Chapt. 9	Define: the sideways and downward movement of the edge of a plate of the earths crust into the mantle beneath another plate
WEATHERING	Chapt. 5	Breakdown of rocks at the Earth's surface into smaller fragments of the same composition and/or chemically altered into different minerals, or elements and molecules (all called sediments).

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Definitions: Only fill in the table on page 2 or use this page.

Cementation:

Crystallization:

Erosion

Melting:

Subduction: