**Define the following:**

1. Ovum – First stage of prenatal development from zygote to morula.
2. Zygote – Fertilized egg. Characterized by early DNA and protein synthesis
3. Morula – characterized by cell number and DNA increase. In this stage cells are totipotent
4. Blastocyst – stage of development that includes and inner cel mass and trophoblasts
5. Meiosis – Formation of gametes. Provides variation in sexually reproducing animals
6. Implantation – When the blastocyst implants on the side of the uterine wall
7. Totipotency – Cells have the ability to become anything

**Explain in detail the different phases of prenatal development**

Ovum- Zygote to morula

* Cells maintain totipotency
* If some cells of the blastomere are damaged it can still undergo normal development.
* Embryo splitting can be performed at this stage
	+ Identical twins
* Characterized by cellular replication
* No protein synthesis
* Little to no increase in size of organism

Embryonic- Blastocyst to fetus

* Characterized by morphogenesis
	+ Creation of shape
* Single layer of cells giving rise to multiple cell layers
* Blastulation
	+ Rapid increase in blastomere (embryonic cell) number
	+ Formation of a flat layer of cells (trophoblasts) that surround the blastocoele (fluid filled cavity)

Fetal- Fetus to birth

* Most tissues are already formed
* Characterized by a dramatic increase in size of existing organs and tissues.

**Chart the development of somitogenesis**

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