Biology

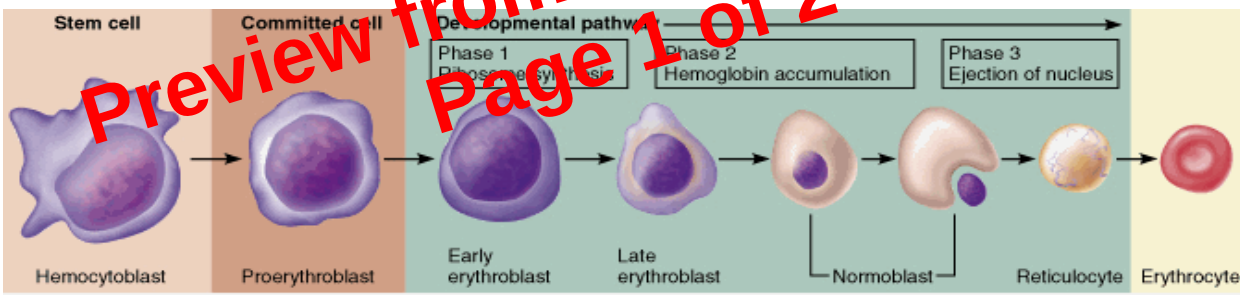
Differentiation

All multicellular organisms have stem cells.
They are undifferentiated , unspecialised cells.
These divide by mitosis and undergo process of differentiation.
They than become more specialised for a particle function.
Stem cells can also divide to produce more stem cells.

Erythrocytes

Erythrocytes are red blood cells.
Their main function is to transport oxygen around the body.
they also transport co2.
Erythrocytes are formed from stem cells in bone marrow.
Red blood cells have no nucleus, so they cannot divide.
So new cells have to be constantly formed from stem cells in order to maintain the erythrocytes count in the blood.
The process is called erythropoiesis.

Stages of erythropoiesis:



Stem cells of the bone marrow are Multipotent – they are capable of forming a number of different types of body cells.
Changes occur that mean that the cell formed by mitosis from the stem cell can only become erythrocytes.
Haemoglobin , oxygen-carrying pigment of red blood cell accumulates in the cytoplasm, than after the nucleus is ejected from the cell.
Even at this stage the cell is still not a fully formed erythrocytes. It has to undergo further change.
Including change in shape to give biconcave disc shape of the mature erythrocyte.