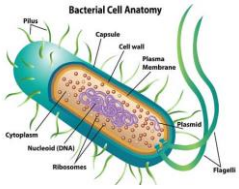
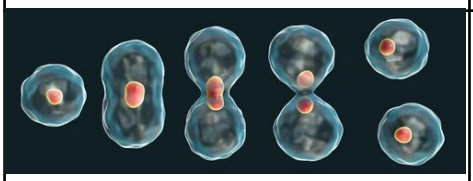
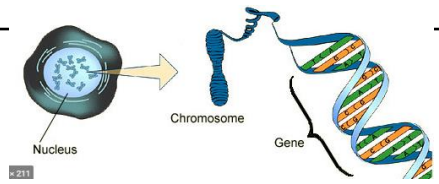
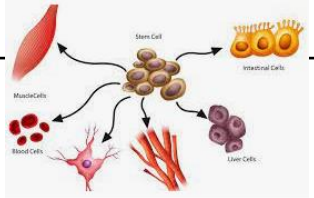
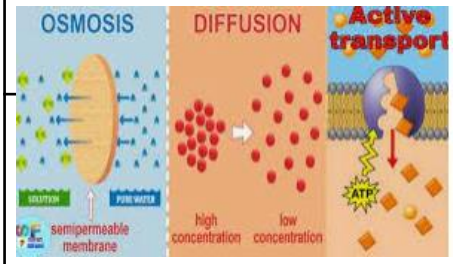
B

Cells

Y9

Rationale

Cells are the basic unit of all forms of life. This unit covers how structural differences between types of cells enables them to perform specific functions within the organism. These differences in cells are controlled by genes in the nucleus. For an organism to grow, cells must divide by mitosis producing two new identical cells. If cells are isolated at an early stage of growth before they have become too specialised, they can retain their ability to grow into a range of different types of cells. This phenomenon has led to the development of stem cell technology. This is a new branch of medicine that allows doctors to repair damaged organs by growing new tissue from stem cells.

Diagrams	Keywords	Definitions
	Prokaryotic cells Plasmids	Much smaller than eukaryotic cells; they don't have a nucleus. Circular rings of DNA found only in prokaryotic cells.
	Cell division Mitosis	The process by which cells make copies of themselves. Cell division that results in 2 identical copies of the original cell.
	Chromosome Gene	A structure found in the nucleus and is made of DNA. A section of a chromosome that carries the instructions to make a protein.
	Stem cells Meristem cells	A cell that has not differentiated and can differentiate to become any type of cell. Stem cells found only in plants.
	Osmosis Active transport	Diffusion of water from a high to a low concentration. Movement of a substance from a low to a high concentration; this requires energy.
Magnification= size of image / size of real object	Electron microscope	Uses electrons instead of light to view smaller objects.