

3.2 THE CELL CYCLE

Learning Outcome

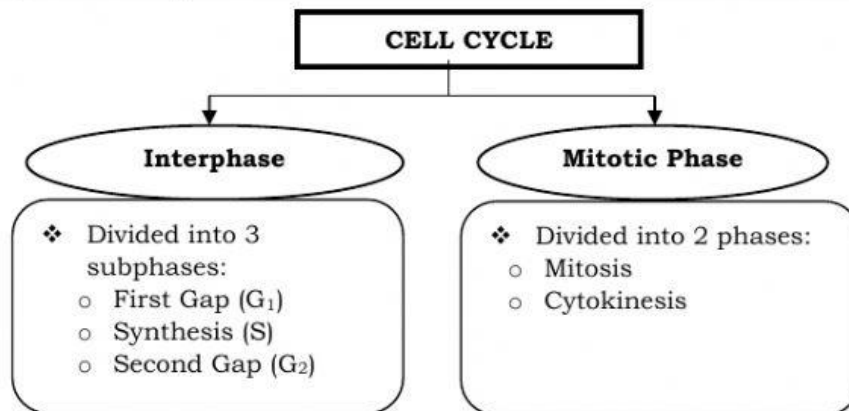
At the end of this topic, students should be able to :

- a) Explain the stages in cell cycle: Interphase and Mitotic Phase.

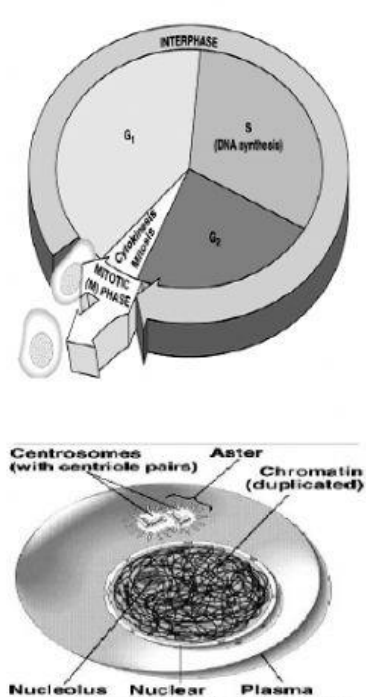
DEFINITION OF CELL CYCLE:

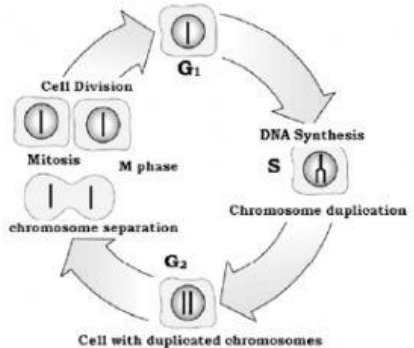
- The complete **sequence** of events in the life of an individual diploid cell.

1. Stages in Cell Cycle



Exercise 3.2 (a): Fill in the blanks with words that best explain the events during cell cycle.

No.	Phase	Explanation
1.	INTERPHASE 	First Gap (G₁) Cell grows and increase in size ✓ Increase the no. of _____ (e.g. mitochondria, ribosome) ✓ Volume of cytoplasm _____ ✓ Protein synthesis occur ✓ Synthesis of, lipid, carbohydrate and various enzymes that are required in S phase. ✓ Chromosome in _____ form.
		Synthesis (S) DNA synthesis phase. ✓ DNA _____ & chromosome _____ forming two identical _____ ✓ the amount of DNA _____ ✓ Chromosome in chromatin form
		Second Gap (G₂) ✓ Cell grows more (continue increase in size & no. of organelles) ✓ Energy stores are _____

			✓ Centrosome duplicated ✓ Increase in size of _____ ✓ Completes preparation for cell division.
2.	MITOTIC PHASE (M Phase) 	Mitosis¹ and Cytokinesis²	1. Karyokinesis (Nuclear Division) Divides the nucleus & distributes the chromosomes to the daughter nuclei. ✓ Divided into 4 stages in mitosis: ➤ _____ ➤ _____ ➤ _____ ➤ _____ 2. Followed by cytokinesis (cytoplasmic division) • Divide cell into two (2) daughter cells.