

Vidya Bhawan Balika Vidyapeeth Lakhisarai

Arun Kumar Gupta

Class 11<sup>th</sup>

Sub. Biology

**Answer the following questions**

**Which cell between a eukaryote and a prokaryote has a shorter cell division time?**

**A.1.** A prokaryotic cell has a shorter cell cycle compared to a eukaryotic cell.

**Q.2. Name the cell cycle phase that has the longest duration.**

**A.2.** The interphase

**Q.3. Which stain is usually used to colour chromosomes?**

**A.3.** Giemsa and Acetocarmine

**Q.4. Name the plant and animal tissue that undergoes meiosis.**

**A.4.** It occurs in the sex cells or the germ cells of female and male reproductive organs in animals and plants, which produces female and male gametes that participate in sexual reproduction.

**Q.5. How much time will two E. Coli cells take to become 32 cells if the average duplication time of E. coil is 20 minutes?**

**A.5.** It takes 1 hour and 20 minutes. There are four succeeding cell divisions which generate 16 cells where each division takes a total of 20 minutes. Hence, the total time =  $20 \times 4 = 80$  minutes or 1 hour and 20 minutes. Thus, 1 cell produces 16 cells in 80 minutes and 2 cells produce 32 cells in 1 hour and 20 minutes.

**Q.6. Which human body part can be utilized to illustrate mitosis phases?**

**A.6.** Except for the germinal cells, all the cells in the human body are the somatic cells. The somatic cells divide by mitosis for regeneration and growth, which can be used to demonstrate mitosis.

**Q.7. For a chromatid to be classified as a chromosome, what attributes does it need to possess?**

**A.7.** The attribute of crossing over.

**Q.8. During which phase of the cell cycle does the DNA get synthesized?**

**A.8.** The S-phase or Synthetic phase of the interphase.

**Q.9. Which phase is the longest in the cell cycle?**

**A.9.** Interphase. It is the longest phase of the cell cycle and is considered the growth phase of the cell cycle in preparation for cell division.

**Q.10. Which stains are used to colour chromosomes?**

**A.10.** Gentian violet, Giemsa stain and Safranin have commonly used stains to colour chromosomes.

