

### 3. CELL CYCLE - MITOSIS, MEIOSIS.

Choose the correct answers :-

- The discovery that "all cells arise by the division of previously existing cells", was made by Rudolf Virchow in the year.  
a) 1865    b) 1855    c) 1835    d) 1841
- Which out of the following is not a stage of cell-cycle?  
a) G<sub>1</sub> Phase    b) G<sub>2</sub> Phase    c) S Phase    d) S<sub>2</sub> Phase
- Which of the following statements about interphasic events is false?  
a) The nuclear envelope remains intact  
b) The DNA amount remains the same.  
c) The size of the nucleolus is greatly increased.  
d) Daughter centriole is originated
- In which of the following meiotic phases is the longest and most significant of all?  
a) Prophase I    b) Metaphase    c) Anaphase    d) Telophase
- Which of the following meiotic phases is the longest and most significant of all?  
a) Prophase I    b) Prophase II    c) Metaphase I    d) Anaphase I
- The evidence for the presence of spindle in cell is based on the fact that  
a) The spindle is visible under the phase contrast and polarising microscopes  
b) The spindle ~~set~~ can be displaced by ultracentrifugation  
c) It has been possible to isolate the spindle from many cells.  
d) All of the above

7. In which of the meiotic prophase I stages synapsis occurs?  
a) Leptotene b) Zygotene c) Pachytene d) Diplotene

8. In which of the following meiotic stages bivalent chromosomes or ~~trands~~ tetrads are formed?  
a) Leptotene b) Zygotene c) Pachytene d) Diplotene

9. In which of the following meiotic stages crossing over takes place?  
a) Leptotene b) Zygotene c) Pachytene d) Diplotene

10. In which of the meiotic phases actual reduction of chromosomes occurs?  
a) Prophase I b) Metaphase I c) Anaphase I d) Telophase I

11. Which of the following processes occurring during meiosis is incorrect?  
a) Pairing or synapsis b) Duplication of chromosomes during early prophase c) Chiasma formation or crossing over d) Exchange of the genetic material between non-sister chromatids or homologous chromosomes

12. Cells which do not divide frequently have a longer \_\_\_\_\_ phase.  
a) S b) G<sub>1</sub> c) G<sub>2</sub> d) Mitotic

13. Which of the following zones of kinetochore is composed of a pair of coiled axial fibrils 50-80 Å in diameter?  
a) Outer dense zone b) Inner zone c) Intermediate zone  
d) Both (a) and (c)