

## Cell Cycle and Cell Division

M-Phase is the most dramatic period and

1. it represents the phase where the actual division that is cytokinesis take place.
3. Interkinesis is the interphase between Meiosis I + II. It is without S-phase.
5.  $G_0$ . During this stage cells are metabolically active but they do not divide.
6. It takes place between in both haploid and diploid cell.

10. 
$$n + \frac{n}{4} = 50 + \frac{50^{12.5}}{4} = 62.5 \text{ i.e. } 63.$$

14. Human nerve cells and Heart cells are present in  $G_0$  state

19. Recombinase is group of enzyme which facilitate crossing over. The members are (a) Exonuclease (b) Endonuclease (c) Ligase (d) R-protein (e) topoisomerase.

20 refer Q10.

27.  $G_1 = 7$        $G_2 = 14$       M - Diakinesis = 28.

30 refer Q5.

39 Reduction of ploidy at the end of Meiosis-I.

43 refer Q10

49. (a) Leptotene: Chromosomes are present in the form of fine thread like.

Q6. Cell plate method :- centrifugally  
cell furrow " " = centrifugally

### Assertion + Reason

1. They are reformed during prophase
2. Meiosis occur only in haploid cell.
3. Interphase consist of S-phase where as Interkinesis is without 'S' phase.
5. Karyokinesis occur in S-phase
6. Interphase; cell is metabolically active
7. DNA Synthesis occur during 'S' phase



15. Each chromosome of bivalent  
attaches with two spindle in  
metaphase

18 They disappear in late prophase

Previous year question

1. During S-phase duplication of DNA takes place due to which <sup>amount</sup> dna<sub>1</sub> doubles up.
4. The site of meiosis is germinal cell.
8. Recombinase is group of enzyme that is functional during pachytene (crossing over). Mitotic stages are absent during in prokaryotes (E. coli).
15. During Zygotene pairing of homologous chromosomes takes place; this is known as Synapsis.
24. The stage between the two meiosis is known as Interkinesis. It is without S-phase.
31. Once the cell has entered 'S' phase it the cell cycle cannot be stopped.
38. Kinetochores are disc shaped structures which are the site of attachment of chromosomal fibre.
46. Crossing over lead to recombination.



48. ~~from~~ This phenomena is brought about by U-protein or unwindase which is the part of recombination group of enzyme.

54. The arrangement of Chromosome on the equatorial plate is during Metaphase is known as congression.

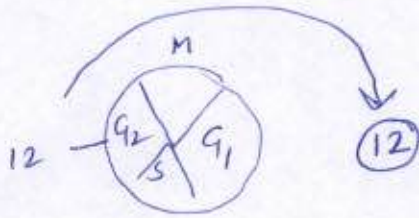
59. Colchicine inhibits formation of spindle fibre.

61. Cell plate is laid during cytokinesis and it is future middle lamella.

72. Colchicine is obtained from colchicum autumnale

80.  $2N = 12$   $N = 6$  i.e.  $2^4 = 2^6 = 32$  64

90



93. The number of chromosome remain same as it is equational  $\div$ .

106: Chiasmata are the point of crossing over.

119 During metaphase I the cross over get arranged at the equator.