

**Class : XI<sup>th</sup>**  
**Date :**

**Subject : BIOLOGY**  
**DPP No. : 3**

**Topic :- Cell Cycle and Cell Division**

- Which type of chromosomes segregate when a cell undergoes meiosis?
  - Homologous chromosomes
  - Non-homologous chromosomes
  - Both (a) and (b)
  - Centric and acentric chromosomes
- Term 'meiosis' was proposed by
  - Farmer and Moore
  - Flemming
  - Strasburger
  - Darlington
- Meiosis can be observed in
  - tapetal cells
  - Megaspores
  - Micropores
  - Spore mother cells
- Crossing over that results in genetic recombination in higher organisms occurs between
  - Sister chromatids of bivalent
  - Non-Sister chromatids of a bivalent
  - Two daughter nuclei
  - Two different bivalents
- In which of the following stage of the cell cycle, the attachment of spindle fibres to kinetochores of chromosomes occurs?
  - Prophase
  - Metaphase
  - Anaphase
  - Telophase
- The sequence of events by which a cell duplicates its genome, synthesizes the other constituents of the cell and eventually divides into two daughter cells is termed as
  - Cell division
  - Cell cycle
  - Cell growth
  - Cell duplication
- In animal cell has, cytokinesis involves
  - The separation of sister chromatids
  - The contraction of the contractile ring of micro filament
  - Depolymerization of kinetochore microtubules
  - A protein kinase that phosphorylates other enzymes

8. Which is correct for meiotic metaphase-I?
  - a) Bivalents are arranged at equator
  - b) Univalents are arranged at equator
  - c) Non-homologous chromosomes forms pair
  - d) Spindle fibres are attached at chromomere
  
9. Crossing over is the exchange of genetic material between
  - a) Non-sister chromatids of the homologous chromosomes
  - b) Sister chromatids of the homologous chromosome
  - c) Chromatids of non-homologous chromosomes
  - d) The genes those are completely linked
  
10. Which of the following phase of the cell cycle is not a part of interphase?
  - a) S
  - b) M
  - c)  $G_0$
  - d)  $G_1$
  
11. Colchicine arrests which of the following stage of cell division?
  - a) Prophase
  - b) Anaphase
  - c) Telophase
  - d) Metaphase
  
12. Select the correct option with respect to mitosis.
  - a) Chromatids start moving towards opposite poles in telophase
  - b) Golgi complex and endoplasmic reticulum are still visible at the end of prophase
  - c) Chromosomes move to the spindle equator and get aligned along equatorial plate in metaphase
  - d) Chromatids separate but remains in the centre of the cell in anaphase
  
13. Small disc-shaped structures at the surface of the centromeres that appear during metaphase are
  - a) Kinetochores
  - b) Metaphase plate
  - c) Spindle fibres
  - d) Chromatid
  
14. Cell division can not be stopped in which phase of the cell cycle?
  - a)  $G_1$ -phase
  - b)  $G_2$ -phase
  - c) S-phase
  - d) Prophase
  
15. Meiosis in AaBb will produce gametes
  - a) AB, aB, Ab, ab
  - b) AB, ab
  - c) Aa, bb
  - d) Aa, Bb
  
16. The stage between two meiotic division is called
  - a) Interphase
  - b) Cytokinesis
  - c) Interkinesis
  - d) Karyokinesis
  
17. If we ignore the effect of crossing over, how many different haploid cells arise by meiosis in a diploid cell having  $2n = 12$ ?
  - a) 8
  - b) 16
  - c) 32
  - d) 64

18. Which of the following CdKs and cyclins comes under  $G_1$  check point?  
a) CdK<sub>4</sub>/ Cyclin D      b) CdK<sub>6</sub>/ Cyclin D      c) Both (a) and (b)      d) CdK<sub>2</sub>/ Cyclin B
19. Crossing over occurs at  
a) Single strand stage  
b) Two strand stage  
c) Four strand stage  
d) Eight strand stage
20. Chromosome number can be doubled by using which of the following?  
a) Indole acetic acid  
b) GA  
c) Zeatin  
d) Colchicines

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