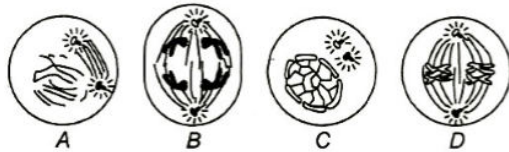


**Class : XI<sup>th</sup>**  
**Date :**

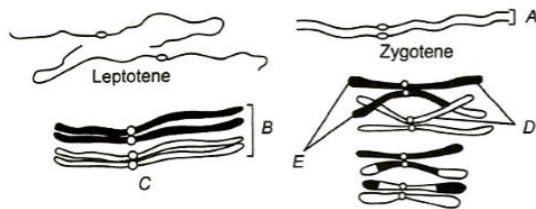
**Subject : BIOLOGY**  
**DPP No. : 9**

## Topic :- Cell Cycle and Cell Division

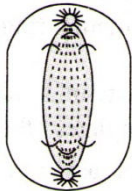
1. Identify the following figures (A – D) and choose the correct option




- a) A-Metaphase-II, B-Anaphase-I, C-Prophase-I, D-Anaphase-II  
 b) A-Prophase-I, B-Anaphase-I, C-Interphase, D-Metaphase-I  
 c) A-Metaphase-I, B-Anaphase-I, C-Prophase-I, D-Anaphase-II  
 d) A-Prophase-II, B-Anaphase-I, C-Interphase, D-Metaphase-II
2. During the G<sub>1</sub>-phase of cell division
- a) RNA and proteins are synthesized  
 b) DNA and proteins are synthesized  
 c) Cell prepares for M-phase  
 d) Cell undergoes duplication
3. Study the diagram showing meiosis carefully and choose the correct options for A – E



- a) A – Tetrad, B – Bivalent, C – Zygotene stage, D – Sister chromatids, E – Non-sister chromatids  
 b) A – Bivalent, B – Tetrad, C – Pachytene stage, D – Crossing over, E – Non-sister chromatids  
 c) A – Bivalent, B – Tetrad, C – Pachytene stage, D-Non-Sister chromatids, E-Sister chromatids  
 d) A – Bivalent, B – Tetrad, C – Pachytene stage, D – Sister chromatids, E – Non-Sister chromatids
4. In ...A.... phase, there is synthesis of RNAs and proteins that are needed for cell growth and replication of DNA. While it is ...B... phase, where synthesis of protein occur that is needed for spindle formation and mitosis to continue.  
 Identify A and B to complete the given statement
- a) A-G<sub>1</sub>; B-S                      b) A-G<sub>2</sub>; B-S                      c) A-G<sub>1</sub>; B-G<sub>2</sub>                      d) None of these

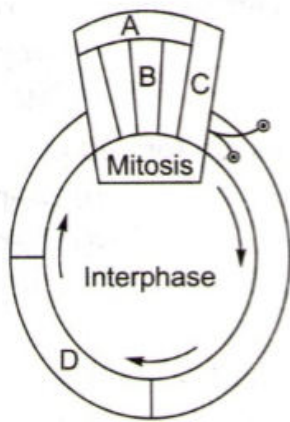
5. Interphase nucleus is enclosed by  
 a) Non-porous nuclear membrane  
 b) Porous double nuclear membrane  
 c) Non-porous double discontinuous nuclear membrane  
 d) A single porous unit membrane
6. Read the following statements and select the correct option  
 I. M-phase represents the phase when the actual cell division or mitosis occurs  
 II. Interphase represents the phase between two successive M-phases  
 III. In the 24 hrs average duration of cell cycle of a human cell, cell division proper lasts for only about an hour  
 IV. The M-phase lasts more than 95% of the duration of cell cycle  
 a) I, II and III                      b) II and IV                      c) II, III and IV                      d) I and IV
7. What change would occur in DNA content, during S-phase?  
 a) No change  
 b) The amount of DNA per cell doubles  
 c) The amount of DNA per cell increase four folds  
 d) The amount of DNA per cell decreases
8. In meiosis, the daughter cells are not similar to that of parent because of  
 a) Crossing over                      b) Synapsis                      c) Both (a) and (b)                      d) None of these
9. Which stages of cell division do the following figures 'A' and 'B' represent respectively?
- 

A



B
- a) Metaphase                      -                      Telophase  
 b) Telophase                      -                      Metaphase  
 c) Late anaphase                      -                      Prophase  
 d) Prophase                      -                      Anaphase
10. During cell cycle, RNA and non-histone proteins are synthesized in  
 a) S-phase                      b) G<sub>0</sub>-phase                      c) G<sub>1</sub>-phase                      d) M-phase

11. Alleles of different genes that are on the same chromosome may occasionally separated by a phenomenon known as
- Pleiotropy
  - Epistasis
  - Continuous variation
  - Crossing over
12. In meiosis, division is
- I reductional and II equational
  - I equational and II reductional
  - Both reductional
  - Both equational
13. Cells in  $G_0$ -phase of cell cycle
- Exit cell cycle
  - Enter cell cycle
  - Suspend cell cycle
  - Terminate cell cycle
14. Given below is a schematic break-up of the phases/stages of cell cycle



- Which one of the following is the correct indication of the stage/phase in the cell cycle?
- B-Metaphase
  - C-Karyokinesis
  - D-Synthetic phase
  - A-Cytokinesis

15. Choose the correct answer for the statements given below
- I. Protein involved in the shortening and thickening of chromosome fibres
  - II. The name of early prophase when elongated chromosomes occur in overlapped condition like a ball of wool without their ends being visible
  - III. Each group of astral rays along with its centriole pair
  - IV. Name the narrow point which is responsible for attaching two sister chromatids to each other
- a) I-Codensins, II-Aster, III-Spindle stage, IV-Kinetochore
  - b) I-Codensins, II-Aster, III-Spindle stage, IV-Centromere
  - c) I-Codensins, II-Spindle stage, III-Aster, IV-Centromere
  - d) I-Tubulins, II-Spindle stage, III-Amphiaster, IV-Kinetochore
16. If you are provided with root-tips of onion in your class and are asked to count the chromosomes, which of the following stages can you most conveniently look into?
- a) Metaphase                      b) Telophase                      c) Anaphase                      d) Prophase
17. In cell cycle, during which phase chromosomes are arranged at equatorial plate?
- a) Metaphase                      b) Anaphase                      c) Telophase                      d) Prophase
18. Meiosis in a plant occurs when there is a change
- a) From gametophyte to sporophyte
  - b) From sporophyte to gametophyte
  - c) From gametophyte to gametophyte
  - d) From sporophyte to sporophyte
19. When number of chromosomes is already reduced to half in the first reductional division of meiosis, what is the necessity of second meiotic division?
- a) The division is required for the formation of four gametes
  - b) Division ensures equal distribution of haploid chromosomes
  - c) Division ensures equal distribution of genes on chromosomes
  - d) Division is required for segregation of replicated chromosomes
20. Select the correct option
- a) Division of the cytoplasm occurs before the division of the nucleus
  - b) Division of the nucleus occurs before the division of the cytoplasm
  - c) Both the division of the nucleus and cytoplasm occurs at the same time
  - d) None of the above