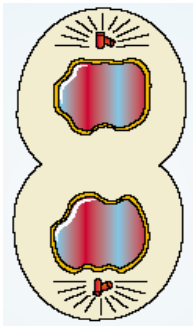


BOTANY : CELL CYCLE AND CELL DIVISION

DPP No. : 1

- Meiosis takes place in
 - Conidia
 - Gemmule
 - Megaspore
 - Meiocyte
- A stage in cell division is shown in the figure. Select the answer which gives correct identification of the stage with its characteristics.



| | | |
|-----|---------------|--|
| (1) | Late anaphase | Chromosomes move away from equatorial plate, Golgi complex not present |
| (2) | Cytokinesis | Cell plate formed, mitochondria distributed between two daughter cells |
| (3) | Telophase | Endoplasmic reticulum and nucleolus not reformed yet |
| (4) | Telophase | Nuclear envelop reforms, Golgi complex reforms |

- The complex formed by a pair of synapsed homologous chromosomes is called
 - Kinetochores
 - Bivalent
 - Axoneme
 - Equatorial plate
- During which phase(s) of cell cycle, amount of DNA in a cell remains at 4C level if the initial amount is denoted as 2C ?
 - G_0 and G_1
 - G_1 and S
 - Only G_2
 - G_2 and M

5. Select correct sequence of substages of Prophase-I of Meiotic division:
 (A) Zygotene (B) Pachytene (C) Diakinesis (D) Leptotene (E) Diplotene
 Choose the correct answer from the options given below:
 (1) (D), (B), (A), (E), (C) (2) (A), (B), (D), (E), (C)
 (3) (D), (A), (B), (E), (C) (4) (A), (D), (B), (C), (E)
6. During which stages of mitosis and meiosis, respectively does the centromere of each chromosome split?
 (1) Metaphase, Metaphase II (2) Prophase, Telophase I
 (3) Telophase, Anaphase I (4) Anaphase, Anaphase II
7. Given below are two statements:
Statement I : During G₀ phase of cell cycle, the cell is metabolically inactive.
Statement II : The centrosome undergoes duplication during S phase of interphase. In the light of the above statements, choose the most appropriate answer from the options given below:
 (1) Both Statement I and Statement II are incorrect.
 (2) Statement I is correct but Statement II is incorrect.
 (3) Statement I is incorrect but Statement II is correct.
 (4) Both Statement I and Statement II are correct.
8. Which stage of meiosis can last for months or years in the oocytes of some vertebrates ?
 (1) Leptotene (2) Pachytene
 (3) Diplotene (4) Diakinesis
9. Which of the following options gives the correct sequences of events during mitosis?
 (1) Condensation → nuclear membrane disassembly → crossing over → segregation → telophase
 (2) Condensation → nuclear membrane disassembly → arrangement at equator → centromere division → segregation → telophase
 (3) Condensation → crossing over → nuclear membrane disassembly → segregation → telophase
 (4) Condensation → arrangement at equator → centromere division → segregation → telophase
10. Anaphase promoting Complex (APC) is a protein degradation machinery necessary for proper mitosis of animal cells. If APC is defective in a human cell, which of the following is expected to occur ?
 (1) Chromosomes will not condense (2) Chromosomes will be fragmented
 (3) Chromosomes will not segregate (4) Recombination of chromosome arms will occur

