NEET : CHAPTER WISE TEST- 10

SUBJECT :- BIOLOGY **DATE.....**

CLASS :- 11th **NAME.....**

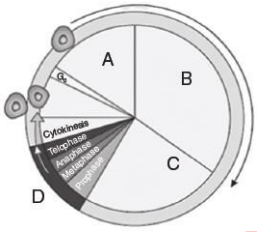
CHAPTER :- CELL CYCELE CELL DIVISION **SECTION.....**

(SECTION-A)

1. Which of the following is correct about cell cycle?
(A) All events occur in coordinated manner.
(B) All events are under genetic control.
(C) DNA synthesis occurs only during one specifi c stage in the cell cycle.
(D) All of these

2. Our cell can divide itself once approximately in
(A) 24 hours (B) 24 minutes
(C) 24 seconds (D) 24 days

3. Identify A, B, C and D in the below diagram:



(A) A–G_1, B–S, C–G_2, D–M Phase
(B) A–G_2, B–M Phase, C–G_1, D–S
(C) A–S, B–G_2, C–G_1, D–M Phase
(D) A–M Phase, B–G_1, C–G_1, D–S

4. S-phase is not characterized by
(A) DNA duplication
(B) No increase in chromosome number
(C) DNA replication
(D) Duplication of centriole in nucleus of eukaryotic animal cell

5. Select the incorrect statement from the following:
(A) In animals, mitotic cell division is only seen in the diploid somatic cells.
(B) Plants can show mitotic division in both haploid and diploid cells.
(C) In an adult's heart, the cells does not divide.
(D) All organisms starts their life cycle from multiple cell.

6. Prophase is characterized by
(A) Initiation of condensation of chromosomal material.
(B) Centrioles moving towards opposite pole.
(C) Initiation of the assembly of mitotic spindle.
(D) All of these

7. Which of the following initiates the start of metaphase?
(A) Completion of bivalent chromosome formation
(B) Assemblage of microtubules of nucleoplasm
(C) Complete disintegration of nuclear envelope
(D) Duplication of chromosome

8. Anaphase is characterized by
(A) Splitting of centromere
(B) Separation of chromatids
(C) Movement of chromatid to opposite pole
(D) All of these

9. Select the total number of correct statement:
I. Cell-plate formation occurs in plant cell during cytokinesis.
II. During cytokinesis mitochondria and plastid gets distributed between two daughter cells in mitosis.
III. Liquid endosperm in coconut is syncytium.
IV. Furrow formation occurs in Animal cell during cytokinesis
(A) 1 (B) 2 (C) 3 (D) 4

10. Cell which divides by mitosis is
(A) Upper layer of epidermis
(B) Cells lining gut
(C) Stem cells
(D) All of these

11. Which of the following holds true about meiosis?
I. It ensures the production of haploid phase in the life cycle of sexually reproducing organism where fertilization restores the diploid phase.
II. It involves the two sequential cycle of nuclear and cell division called meiosis I and II but only a single cycle of DNA replication.
III. It involves the pairing of homologous chromosomes and recombination between them.
IV. Four haploid cells are formed at the end of meiosis.
(A) I, II, IV only (B) IV only
(C) I and III only (D) All of these

12. Crossing over is an exchange of genetic material between
(A) Homologous chromosome
(B) Heterologus chromosome
(C) Non-homologous chromosome
(D) All of these

13. Diakinesis is characterized by
(A) Condensation of chromosome
(B) Assemblage of spindle
(C) Disappearance of nucleous and uclear membrane
(D) All the above

14. The stage between two meiosis is
(A) M-phase (B) Interphase
(C) S-phase (D) Interkinesis

15. The cellular structure which always disappears during mitosis or meiosis is
(A) Plastids
(B) Plasma membrane
(C) Nucleolus and nuclear envelope.
(D) None of these

16. A cell has 23 pairs of chromosomes just after the completion of mitotic telophase. The number of chromatids at the preceding metaphase was
(A) 23 (B) 46 (C) 69 (D) 92

17. Cyclin protein is required for cell cycle. Which other molecule is essential for the completion of cell cycle?
(A) CCK (B) CKC
(C) CDK (D) CKD

18. Assertion: Liquid endosperm in coconut is multinucleated.
Reason: Karyokinesis is not followed by cytokinesis.
(A) If both the assertion and the reason are true and the reason is a correct explanation of the assertion.
(B) If both the assertion and reason are true but the reason is not a correct explanation of the assertion.
(C) If the assertion is true but the reason is false.
(D) If both the assertion and reason are false.

19. Assertion: Meiosis takes place in pollen mother cells.
Reason: Each pollen mother cell produces 4 haploid pollen grains.
(A) If both the assertion and the reason are true and the reason is a correct explanation of the assertion.
(B) If both the assertion and reason are true but the reason is not a correct explanation of the assertion.
(C) If the assertion is true but the reason is false.
(D) If both the assertion and reason are false.

20. Assertion: In mitotic metaphase, morphology of chromosomes can most easily study.
Reason: Condensation of chromosomes is completed in this stage.
(A) If both the assertion and the reason are true and the reason is a correct explanation of the assertion.
(B) If both the assertion and reason are true but the reason is not a correct explanation of the assertion.
(C) If the assertion is true but the reason is false.
(D) If both the assertion and reason are false.

21. Select the correct option.
Column I
a.Synapsis aligns homologous chromosomes –
b. Synthesis of RNA and protein –
c. Action of enzyme recombinase –
d.Centromeres do not separate but chromatids move towards opposite poles –
Column II
1. Anaphase II
2. Zygotene
3. G2 phase
4. Anaphase I
(A) a : 2, b : 1, c : 3, d : 4
(B) a : 2, b : 3, c : 1, d : 4
(C) a : 1, b : 2, c : 3, d : 4
(D) a : 2, b : 3, c : 4, d : 1

22. Colchicine is considered as mitotic poison and causes polyploidy in dividing cells because it
(A) induces the replication of DNA
(B) inhibits crossing over
(C) causes depolymerisation of tubulin protein
(D) prevents condensation of chromatin material

23. Select the incorrectly matched pair:
(A) Formation of/recombination nodule - Pachytene
(B) Tendency of separation of recombined homologous chromosomes - Diplotene
(C) The univalent chromosomes align at the equator Metaphase I
(D) Final stage of meiosis I - Telophase I

24. Consider the following statements and select the option that correctly fills the blank:
(i) The chromatids of a homologous chromosome become clearly visible as tetrad in (A).
(ii) During the cytokinesis in plant cells, phragmoplast is formed and grows (B) to form the cell plate.

	A	B
(A)	Zygotene	Centrifugally
(B)	Pachytene	Inward
(C)	Pachytene	Centrifugally
(D)	Leptotene	Outwards

25. Read the following statements and select the correct option:
(a) Human cell divides once in approximately every 24 hours.
(b) Centriole duplication occur in the cytoplasm in pre- mitotic gap phase.
(c) In the quiescent phase, cells remain metabolically inactive.
(A) All are correct
(B) All are incorrect except (A)
(C) Only (A) and (C) are incorrect
(D) Only (A) and (B) are correct

26. The enzyme recombinase is required at which state of meiosis
(A) Pachytene (B) Zygotene
(C) Diplotene (D) Diakinesis

27. Exchange of paternal and maternal chromosomes material during cell division is
(A) Dyad formation
(B) Bivalent formation
(C) Crossing over
(D) Synapsis

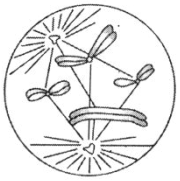
28. Anaphase of the mitosis is different from anaphase I, as it shows
(A) Alignment of chromosomes at the equator
(B) Separation of homologues chromosomes towards the opposite poles
(C) Splitting of centromere and separation of sister chromatid towards the opposite poles
(D) Attachment of spindle fibre from opposite poles to the Kinetochores of sister chromatids

29. A plant cell has 16 bivalents at prophase I of meiosis. How many chromosomes and chromatids respectively will be present in each gamete of this plant?
(A) 8 chromosomes, 8 chromatids
(B) 16 chromosomes, 32 chromatids
(C) 16 chromosomes, 16 chromatids
(D) 16 chromosomes, 32 chromatids

30. Male gamete of a plant has 20 pg DNA. What would be the amount of DNA in the meiocyte of the same plant a its G, phase of the cell cycle?
(A) 20 pg (B) 40 pg
(C) 10 pg (D)80 pg

31. In plants, meiosis cannot occur in
(A) Pollen grain (B) Endosperm
(C) Spore mother cell (D) Both (A) and (B)

32. A stage of cell division is depicted in the given figure. Select the most appropriate option as answer which gives the correct identification of the stage.



(A) Metaphase
(B) Transection to metaphase
(C) Anaphase
(D) Telophase

33. Arrange the following events of meiosis in the correct sequence:
(A) Terminalisation
(B) Crossing over
(C) Synapsis
(D) Disjunction of chromosomes
(A) C, B, A, D (B) C, B, D, A
(C) B, A, C, D (D) C, D, B, A

34. Identify the meiotic stage in which
(A) The chromosome becomes gradually visible with compaction of chromatin
(B) The complex formed by a pair of synapsed homologous chromosomes
(C) The four chromatids of each bivalent chromosome distinct and clearly appear as tetrad

	A	B	C
(A)	Leptotene	Pachytene	Diplotene
(B)	Leptotene	Zygotene	Pachytene
(C)	Zygotene	Pachytene	Diplotene
(D)	Zygotene	Diplotene	Pachytene

35. Beginning of diplotene stage is characterised by
(A) Pairing of homologous chromosomes
(B) Exchange of genetic material between non-sister chromatid of homologous chromosomes
(C) Dissolution of synaptonemal complex
(D) Terminalisation of chiasmata

(SECTION-B)

36. Read the following statements w.r.t. M-phase and select the correct option:
(a) Mitosis involves a series of changes in the nucleus only.
(b) Clear cut lines cannot be drawn between two stages of karyokinesis.
(c) Cytokinesis occurs after karyokinesis.
(d) In M-phase cell duplicates its cellular components and distributes them in orderly manner.
(A) (A), (B) and (C) are correct
(B) (B) and (C) are correct
(C) (B) (C) and (D) are correct
(D) (A), (C) and (D) are correct

37. All statements are incorrect w.r.t. mitosis except
(A) Metaphase is the best stage to study shape chromosomes
(B) During anaphase chromosomes lose individuality
(C) Colchicine inhibits mitosis by inhibiting format of microtubules
(D) It is also called heterotypic division

38. Read the following statements, and select the correct option:
Statement (A): Complete disintegration of nuclear envelope marks the starts of the second phase of mitosis.
Statement (B): Metaphase chromosome is made up of two sister chromatids.
(A) Only (A) is correct
(B) Only (B) is correct
(C) Both (A) and (B) are correct
(D) Both (A) and (B) are incorrect

39. During cell growth, DNA synthesis takes place in
(A) G_1 phase (B) G_2 phase
(C) M phase (D) S phase

40. In an onion root tip cell, there are 24 chromosomes. How many chromosomes will be present in the meristematic cells of onion?
(A) In G, phase (B) After S phase
(C) After M phase

	A	B	C
(A)	24	24	24
(B)	24	24	48
(C)	12	24	48
(D)	24	48	12

41. The cells divide occasionally just to replace the cell lost to injury or cell death are remained in
(A) G_0 phase (B) Quiescent stage
(C) Interphase (D) All except (C)

42. Comparing small and large cells, which statement is correct?
(A) Small cells have a small surface area per volum ratio.
(B) Exchange rate of nutrients is fast with small cells.
(C) Small cells have a large surface area per volum ratio.
(D) More than one option is correct.

43. The second gap phase of interphase present between S and M phase includes all, except
(A) Duplication of mitochondria, chloroplast, Golgi bodies
(B) Centriole duplication
(C) Synthesis of tubulin protein
(D) Synthesis of RNA

44. Chromosomes appear like a "ball of wool" in
(A) Early prophase (B) Late prophase
(C) Metaphase (D) Interphase

45. Which of the following is a mitogen?
(A) Cyanide (B) Insulin
(C) Mustard gas (D) Azide

46. Identify the stage of the cell division and select the option that is true for it

(A) It marks the end of nuclear division
(B) Best stage to study the shape of chromosome
(C) Microtubes of spindle fibre get attached to the kinetochores
(D) Nuclear membrane reassembles around the chromosomes cluster

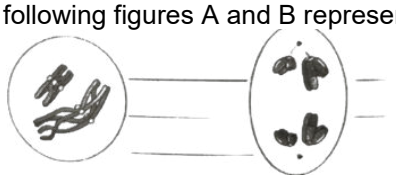
47. Read the following statements and select the correct option:
(A) Mitosis takes place in the somatic cells and meiosis takes place in the germ cells.
(B) During mitosis, the DNA replication occurs once for one cell division and in meiosis the DNA replicate twice for two cell divisions.
(C) Mitosis and meiosis occur both in sexually and asexually reproducing organisms.
(A) A only (B) (A) and (B) only
(C) (B) only (D) (A) and (C) only

48. In which stage of the cell division, chromosomes ar most condensed?
(A) Prophase (B) Metaphase
(C) Anaphase (D) Telophase

49. A synaptonemal complex is formed during A stage and dissolves during B stage complete the above statement by choosing the correct option for A and B.

	A	B
(A)	Leptotene	Zygotene
(B)	Zygotene	Diplotene
(C)	Leptotene	Diplotene
(D)	Pachytene	Diakinesis

50. Which stage of cell division do the following figures A and B represent?



	A	B
(A)	Prophose I	Anaphase II
(B)	Prophose I	Anaphase I
(C)	Prophose II	Anaphase I
(D)	Prophose II	Anaphase II