Class Test - 04

Yakeen NEET 2.0 - 2026

Duration : 30 Min.

Topic : Cell Cycle and Cell Division

Botany By Rupesh Chaudhary Sir

1. In meiosis-I, condensation and coiling of chromatin fibres started during
(1) Metaphase (2) Leptotene
(3) Diakinesis (4) Diplotene

2. In pachytene, each tetrad contains
(1) Two chromatids
(2) One chromatid
(3) Four chromatids
(4) Three chromatids

3. Crossing over occurs during
(1) Anaphase I (2) Leptotene
(3) Diplotene (4) Pachytene

4. The homologous chromosomes move towards the opposite poles during
(1) Anaphase I (2) Anaphase II
(3) Leptotene (4) Pachytene

5. _____ marks the site where crossing over had occurred.
(1) Diakinesis (2) Synapsis
(3) Chiasmata (4) Leptotene

6. Terminalisation of chiasmata occurs during
(1) Prophase-I
(2) Metaphase-I
(3) Anaphase-I
(4) Telophase-I

7. Bivalent chromosomes align themselves at the equator during
(1) Metaphase I
(2) Prophase I
(3) Metaphase II
(4) Anaphase II

8. If there are 30 chromosomes in G_1 phase then what will be number of bivalents in zygotene stage?
(1) 30 (2) 15
(3) 45 (4) 60

9. What will be the amount of DNA in meiosis II products if meiocyte contains 30 pg DNA in G_1 phase?
(1) 30 pg (2) 60 pg
(3) 15 pg (4) 120 pg

10. In animal cell, cytokinesis is achieved by
(1) Furrow formation with the help of microfilaments
(2) Cell plate formation with the help of microtubules
(3) Appearance of furrow with the help of microtubules
(4) Cell plate formation with the help of myosin protein

11. On a chromosome, site for attachment of spindle fibres is
(1) Secondary constriction
(2) Primary constriction
(3) Kinetochore
(4) Satellite

12. Choose the incorrect match
(1) Synaptonemal complex - Zygotene formation
(2) Recombination nodule - Pachytene formation
(3) Terminalisation of chiasmata - Diplotene
(4) Disappearance of nucleolus - Diakinesis

13. A bivalent in pachytene stage, consists of
(1) Two chromatids and one centromere
(2) Two chromatids and two centromeres
(3) Four chromatids and two centromeres
(4) Four chromatids and four centromeres

14. Mitosis is significant for
(a) Growth
(b) Healing and regeneration
(c) Repair
(d) Maintenance of cell size
(1) Only (a) and (b)
(2) Only (c) and (d)
(3) Only (b) and (c)
(4) All (a), (b), (c) and (d)

15. The phase between two successive M phases is called
(1) Prophase (2) Metaphase
(3) Anaphase (4) Interphase

16. The quiescent stage of cell is
(1) An inactive stage of cell w.r.t. cell divison
(2) An abnormal stage of dividing cell
(3) Seen only in meristematic tissues
(4) Not found in higher animals

17. Chromosomal material condenses to form compact mitotic chromosomes. This process starts during
(1) Metaphase (2) Anaphase
(3) Telophase (4) Prophase

18. A metaphasic chromosome in mitotic division is made up of
(1) 2 sister chromatids
(2) 4 sister chromatids
(3) 2 non-homologous chromosomes
(4) 2 homologous chromosomes

19. In meiotic cell division, centromere splits during
(1) Metaphase II
(2) Anaphase II
(3) Metaphase I
(4) Anaphase I

20. The gap between meiosis I and meiosis II is not characterized with
(1) Centriole duplication in animal cells
(2) RNA synthesis
(3) Protein synthesis
(4) DNA replication

21. Bivalent or a tetrad is formed in
(1) Zygotene
(2) Diplotene
(3) Leptotene
(4) Diakinesis

22. Recombination between homologous chromosomes is completed by the end of
(1) Pachytene
(2) Metaphase I
(3) Zygotene
(4) Diakinesis

23. Match the following columns and choose the correct option.

	Column I		**Column II**
a.	Leptotene	(i)	Terminalisation of chiasmata
b.	Diplotene	(ii)	Chiasmata formation
c.	Pachytene	(iii)	Use of recombinase enzyme
d.	Diakinesis	(iv)	Compaction of chromosome

(1) a(ii), b(iii), c(iv), d(i)
(2) a(iv), b(ii), c(iii), d(i)
(3) a(iv), b(ii), c(i), d(iii)
(4) a(iii), b(ii), c(i), d(iv)

24. Which of the following statements is incorrect?
(1) Meiosis increases the genetic variability
(2) Meiosis is important for the formation of haploid cells
(3) The growth of multicellular organisms is due to mitosis
(4) Meiotic division occurs in meristematic cells

25. In all of the given phases, amount of DNA in a cell is double but the chromosome number is same, except
(1) Post mitotic gap phase
(2) Synthesis phase
(3) Pre mitotic gap phase
(4) Prophase

26. Microtubules which radiate out of centrosome are called
(1) Kinetochore (2) Asters
(3) Interzonal fibres (4) Phragmoplast

27. Choose the odd one for metaphase.
(1) Each chromosome has two chromatids
(2) Attachment of spindle fibres to kinetochore
(3) Splitting of centromere
(4) Alignment of chromosome at equator

28. Cytokinesis of plant cells differs from animal cells as the former
(1) Occurs by formation of furrow
(2) Starts at periphery
(3) Occurs by formation of cell plate
(4) Occurs before karyokinesis

29. A pair of synapsed homologous chromosomes is known as

(1) Bivalent (2) Chiasmata
(3) Monad (4) Monovalent

30. Identify the wrongly matched pair.

(1) Recombination nodule - Pachytene
(2) Formation of X-shaped structure - Diplotene
(3) Nuclear envelope disintegrates - Diakinesis
(4) Synaptonemal complex dissolves - Zygotene

31. Match the columns and select the correct match

	Column I		**Column II**
(A)	Pachytene	(i)	Synapsis
(B)	Zygotene	(ii)	Recombination
(C)	Diplotene	(iii)	Chiasmata
(D)	Diakinesis	(iv)	Terminalisation of chiasmata

(1) A-(ii), B-(i), C-(iii), D-(iv)
(2) A-(ii), B-(i), C-(iv), D-(iii)
(3) A-(i), B-(ii), C-(iii), D-(iv)
(4) A-(ii), B-(iv), C-(i), D-(iii)

32. Identify the different stages of cell cycle from the features given below:

A. Can lasts for months or years in oocytes of some vertebrates
B. Resting phase that lasts for more than 95 % of the duration of cell cycle
C. Short lived stage between two meiotic divisions

(1) A-Pachytene, B-Interphase, C-Interkinesis
(2) A-Diplotene, B-Interkinesis, C-Interphase
(3) A-Diakinesis, B-Interphase, C-Interkinesis
(4) A-Diplotene, B-Interphase, C-Interkinesis

33. Read the following statements.

A. Bivalent chromosomes clearly appears as tetrads in pachytene
B. In plant cells cytokinesis occur by the formation of cell plate, which grow centripetally
C. The X-shaped structures appears prominently during diplotene
D. The synaptonemal complex develops during leptotene

How many of the above statements are correct?

(1) Three (2) Two
(3) Four (4) One

34. The enzyme recombinase involves in crossing over during _____ of meiosis.

(1) Metaphase I
(2) Prophase II
(3) Zygotene
(4) Pachytene

35. During _____ of cell division the bivalent chromosomes align on the equatorial plate.

(1) Metaphase I
(2) Metaphase of mitosis
(3) Anaphase I
(4) Metaphase II

36. Which stage represents transition to metaphase-I ?

(1) Diakinesis (2) Leptotene
(3) Zygotene (4) Both (1) and (2)

37. Mitosis occurs in

(1) Both haploid and diploid cells of plant
(2) Only diploid cells of animals but never in plants
(3) Only haploid cells of animal
(4) Only diploid cells of plant

38. Choose characteristics of a cell during G_0 stage :

(1) Metabolically active but no longer proliferate
(2) Cells enter to G_2 phase
(3) Cells may divide occasionally to replace cells lost due to injury or death
(4) Both (1) and (3)

39. Crossing over occurs in

(1) Leptotene (2) Diplotene
(3) Zygotene (4) Pachytene

40. Synaptonemal complex is formed during

(1) Pachytene (2) Zygotene
(3) Leptotene (4) Diakinesis

41. Which phase of prophase-I represents the transition to metaphase I?

(1) Diakinesis (2) Leptotene
(3) Diplotene (4) Zygotene

42. Dissolution of synaptonemal complex occurs during

(1) Pachytene (2) Leptotene
(3) Diplotene (4) Diakinesis

43. Which of the following is the correct sequence?
(1) Leptotene → Diakinesis → Diplotene → Zygotene → Pachytene
(2) Diplotene → Leptotene → Zygotene → Pachytene → Diakinesis
(3) Leptotene → Zygotene → Pachytene → Diplotene → Diakinesis
(4) Diakinesis → Diplotene → Pachytene → Zygotene → Leptotene

44. In oocytes of some vertebrates, can last for months or years.
(1) Diplotene (2) Diakinesis
(3) Leptotene (4) Zygotene

45. Homologous chromosomes begin to separate during
(1) Diakinesis (2) Leptotene
(3) Zygotene (4) Diplotene

46. Longest phase of meiosis I is
(1) Prophase I (2) Metaphase I
(3) Anaphase I (4) Telophase I

47. When paternal and maternal chromosomes mutually exchange their materials in cell division, the event is called
(1) Bivalent formation
(2) Recombination
(3) Synapsis
(4) Dyad formation

48. When does synapsis take place in meiosis?
(1) Pachytene
(2) Diplotene
(3) Zygotene
(4) Leptotene

49. Meiosis I is
(1) Equational division
(2) Homotypic division
(3) Reductional division
(4) Multiplicational division

50. Nucleolus and nuclear membrane disappears in
(1) Metaphase II (2) Anaphase II
(3) Telophase II (4) Prophase II

51. In which of the following phases, splitting of the centromere of each chromosome allow them to move towards opposite poles of the cell?
(1) Anaphase II (2) Metaphase II
(3) Prophase II (4) Telophase II

52. Microtubules attach with kinetochore in
(1) Leptotene (2) Metaphase II
(3) Zygotene (4) Diplotene

53. Anaphase I is characterised by
(1) Alignment of chromosomes on equatorial plate
(2) Reappearance of nucleolus and nuclear membrane
(3) Separation of homologous chromosomes
(4) Terminalisation of chiasmata

54. At the end of meiosis _____ daughter cells are formed.
(1) Four haploid (2) Four diploid
(3) Two haploid (4) Two diploid

55. Which one of the following is not a diploid cell?
(1) Zygote
(2) Microspore mother cell
(3) Primary oocyte
(4) Ovum

56. Ends of chromosomes are attached with nuclear envelope at attachment plate in
(1) Leptotene (2) Zygotene
(3) Pachytene (4) Diplotene

57. If there are 30 chromosomes in G_1-phase, then what will be number of bivalents in zygotene stage?
(1) 30 (2) 15
(3) 45 (4) 60

58. Nucleoprotein complex formation stage is
(1) Pachytene (2) Zygotene
(3) Diplotene (4) Leptotene

59. Bivalent chromosomes clearly appears as tetrad in
(1) Zygotene
(2) Pachytene
(3) Diplotene
(4) Diakinesis

60. Chromatids separation and centromere division occur in

(1) Anaphase
(2) Anaphase-I
(3) Anaphase-II
(4) More than one option is correct

61. What will be the amount of DNA in meiosis-II products if meiocyte contains 30 pg DNA in G_1-phase?

(1) 30 pg (2) 60 pg
(3) 15 pg (4) 120 pg

62. Interkinesis or intrameiotic interphase shows/is

(1) Centriole duplication
(2) DNA synthesis
(3) Generally short lived
(4) More than one option is correct

ANSWER KEY

1.	(2)	**17.**	(4)	**33.**	(2)	**49.**	(3)
2.	(3)	**18.**	(1)	**34.**	(4)	**50.**	(4)
3.	(4)	**19.**	(2)	**35.**	(1)	**51.**	(1)
4.	(1)	**20.**	(4)	**36.**	(1)	**52.**	(2)
5.	(3)	**21.**	(1)	**37.**	(1)	**53.**	(3)
6.	(1)	**22.**	(1)	**38.**	(4)	**54.**	(1)
7.	(1)	**23.**	(2)	**39.**	(4)	**55.**	(4)
8.	(2)	**24.**	(4)	**40.**	(2)	**56.**	(1)
9.	(3)	**25.**	(1)	**41.**	(1)	**57.**	(2)
10.	(1)	**26.**	(2)	**42.**	(3)	**58.**	(2)
11.	(3)	**27.**	(3)	**43.**	(3)	**59.**	(2)
12.	(3)	**28.**	(3)	**44.**	(1)	**60.**	(4)
13.	(3)	**29.**	(1)	**45.**	(4)	**61.**	(3)
14.	(4)	**30.**	(4)	**46.**	(1)	**62.**	(4)
15.	(4)	**31.**	(1)	**47.**	(2)		
16.	(1)	**32.**	(4)	**48.**	(3)		

PW Web/App - https://smart.link/7wwosivoicgd4

Library- https://smart.link/sdfez8ejd80if