



Class Test - 05

Yakeen NEET 2.0 - 2026
Cell Cycle and Cell Division

Duration : 30 Min.

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1. The sequence of events by which cells duplicate their genome, synthesize the other components of cell which eventually distribute into two daughter cells is called
(1) Quiescent stage (2) Generation time
(3) Cell cycle (4) Kinetochore
2. DNA replication occurs in
(1) S phase (2) G₁ phase
(3) G₂ phase (4) M phase
3. A biosynthetic phase where cell organelle duplicate itself is
(1) Interphase (2) Anaphase
(3) Prophase (4) Telophase
4. Yeast can progress through the cell cycle in about
(1) 90 sec (2) 90 min
(3) 90 hrs (4) 90 yrs
5. Interphase is called the resting phase because
(1) It is the most active phase of the cell cycle
(2) It does not involve any activity related to cell division
(3) It does not prepare cell for cell division
(4) It is the phase where cell rests before entering into mitosis
6. _____ phase synthesizes enzymes required during S phase.
(1) G₂ (2) M
(3) S (4) G₁
7. Non-dividing cells enter the
(1) G₂ phase (2) M phase
(3) G₀ phase (4) S phase
8. If the initial amount of DNA is 8 C, then after S phase the amount of DNA would be
(1) 4 C (2) 8 C
(3) 64 C (4) 16 C
9. The number of chromosomes in G₁ phase is 36, the number of chromosomes in S phase is
(1) 36 (2) 18
(3) 22 (4) 37
10. A phase of the cell cycle which lasts more than 95% of the total duration is
(1) Prophase (2) Interphase
(3) Anaphase (4) Telophase
11. Most dramatic period of cell cycle is
(1) G₁ phase (2) G₂ phase
(3) S phase (4) M phase
12. Two daughter cells formed after mitosis are
(1) Non-identical to each other
(2) Identical to each other
(3) Non-identical to parents
(4) Irregular in size
13. Initiation of condensation of chromatin material occurs in
(1) Prophase (2) Anaphase
(3) Telophase (4) Metaphase
14. Mitotic spindle initiates during
(1) Telophase
(2) Anaphase
(3) Prophase
(4) Metaphase
15. Nucleolus and nuclear membrane disappear during
(1) Anaphase
(2) Interphase
(3) Telophase
(4) Prophase
16. The chromosomes are shortest and thickest during
(1) Anaphase
(2) Metaphase
(3) Telophase
(4) Interphase



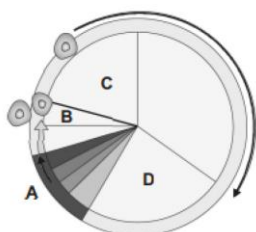
17. Read the following statements
(a) Complete disintegration of the nuclear envelope marks the start of the second phase of mitosis.
(b) Metaphase chromosome is made up of one sister chromatid.
(1) Only (b) is correct
(2) Both (a) & (b) are incorrect
(3) Only (a) is correct
(4) Both (a) & (b) are correct
18. The morphology of the chromosomes is studied during
(1) Metaphase (2) Interphase
(3) Prophase (4) Telophase
19. Chromosomes move towards the pole during
(1) Prophase (2) Metaphase
(3) Telophase (4) Anaphase
20. The centromere splits during
(1) Anaphase (2) Telophase
(3) Interphase (4) Prophase
21. The chromosomes cluster at opposite poles and their identity is lost as discrete elements during
(1) Telophase (2) Anaphase
(3) Metaphase (4) Prophase
22. The mitotic spindle disappears in
(1) Prophase (2) Metaphase
(3) Anaphase (4) Telophase
23. If karyokinesis is not followed by cytokinesis, then gives rise to
(1) Zygote
(2) Fertilised egg
(3) Multinucleate condition
(4) Embryo
24. In meiosis-I, condensation and coiling of chromatin fibres started during
(1) Metaphase (2) Leptotene
(3) Diakinesis (4) Diplotene
25. In pachytene, each tetrad contains
(1) Two chromatids (2) One chromatid
(3) Four chromatids (4) Three chromatids
26. Crossing over occurs during
(1) Anaphase I (2) Leptotene
(3) Diplotene (4) Pachytene
27. The homologous chromosomes move towards the opposite poles during
(1) Anaphase I (2) Anaphase II
(3) Leptotene (4) Pachytene
28. _____ marks the site where crossing over had occurred.
(1) Diakinesis (2) Synapsis
(3) Chiasmata (4) Leptotene
29. Bivalent chromosomes align themselves at the equator during
(1) Metaphase I (2) Prophase I
(3) Metaphase II (4) Anaphase II
30. Major check point of cell cycle is
(1) $G_1 \rightarrow S$ transition
(2) $S \rightarrow G_1$ transition
(3) $G_2 \rightarrow M$ transition
(4) $M \rightarrow G_2$ transition
31. 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
32. 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
33. What is not true about cell cycle?
a. During G_1 phase there is active synthesis of RNA and proteins but no change in its DNA content
b. In synthesis or S phase, each chromosome carries a duplicate set of genes
c. During G_2 phase, a cell contains double the amount (4C) of DNA present in the original diploid cell (2C)
d. In S-phase a cell doubles the original diploid ($2n$) chromosome number
(1) c & d (2) b & c
(3) d only (4) b, c & d



34. Which phase of interphase is the most important point in regulation of the cell cycle, during which it must decide whether the cell will start a new cycle or will enter in G_0 phase?

- (1) G_1 phase (2) S phase
- (3) G_2 phase (4) Quiescent stage

35. Identify the mismatched pair



- (1) A – Starts with karyokinesis and ends with cytokinesis
- (2) B – Stage where cells are inactive metabolically
- (3) C – Cell grows and carries out normal metabolism
- (4) D – Period of cytoplasmic growth

36. Chromatin fibres duplication, Genetic material - $4C$, Histone protein synthesis, Membranous organelle duplication, DNA replication, centriole duplication. How many of the above features are associated with synthesis phase of cell cycle?

- (1) Three (2) Five
- (3) Four (4) Six

37. The two daughter cells formed during mitosis contains

- (1) The same amount of DNA but a set of chromosomes different from those of parental cells
- (2) The same amount of DNA and the same set of chromosomes as those of the parent cell
- (3) Half the amount of DNA and the same set of chromosomes as those of the parent cell
- (4) Double the amount of DNA and a set of chromosomes different from those of the parent cell

38. Higher plants differ from animals in having

- (1) Spindle microtubule
- (2) Anastral mitosis
- (3) Kinetochores
- (4) Disappearance of nucleolus during prophase

39. Which of the following phases are longest and shortest in mitosis?

- (1) Metaphase, Anaphase
- (2) Prophase, Anaphase
- (3) Telophase, Anaphase
- (4) Prophase, Telophase

40. Select the correct match.

- (1) Reformation of ER and Golgi complex – Telophase
- (2) Invisible phase of cell cycle – Metaphase
- (3) Polar movement of chromatids – S-phase
- (4) Formation of Chiasmata – Zygotene

41. Phragmoplast is formed by Golgi complex and grows

- (1) Centripetally to form cell plate
- (2) Centrifugally to form cell plate
- (3) Centripetally to produce a cleavage furrow
- (4) Centrifugally to form a cleavage furrow

42. Select an incorrect statement w.r.t. metaphase.

- (1) Spindle fibres are attached to small disc shaped structures at the surface of centromeres called kinetochores
- (2) The plane of alignment of the homologous pair of chromosomes at metaphase is referred to as the metaphasic plate
- (3) Chromosome appears to be made up of two sister chromatids
- (4) The size of chromosomes can be studied in this phase

43. All are the essential stages that take place during meiosis, except

- (1) Two successive divisions without any DNA replication occurring between them
- (2) Formation of chiasmata and crossing over
- (3) Segregation of homologous chromosomes
- (4) Number of chromosomes in daughter cells after meiosis II is reduced to half but the amount of DNA remains the same

44. If egg of an organism has 10 Pg of DNA in its nucleus. How much DNA would a diploid cell of same organism have in G_2 phase of meiosis?

- (1) 10 Pg (2) 5 Pg
- (3) 20 Pg (4) 40 Pg



45. What will be the content of DNA in a somatic cell at G_2 if its meiotic products have 20 picogram of DNA?
- (1) 40 Pg
 - (2) 20 Pg
 - (3) 80 Pg
 - (4) 160 Pg
46. The recombination nodules which mediate for chromosome recombination appear at intervals on the synaptonemal complex during
- (1) Zygotene stage
 - (2) Meiosis
 - (3) Pachytene stage
 - (4) Diplotene stage
47. The beginning of which stage of prophase is marked by complete terminalisation of chiasmata and inhibition of RNA synthesis?
- (1) Pachytene
 - (2) Diplotene
 - (3) Diakinesis
 - (4) Zygotene
48. Most organelles show duplication in cell cycle during
- (1) G_1 -phase
 - (2) G_0 -phase
 - (3) S-phase
 - (4) G_2 -phase

49. Select the correct option

	Column I		Column II
a.	Synapsis aligns homologous chromosomes	(i)	Anaphase-II
b.	Synthesis of RNA and protein	(ii)	Zygotene
c.	Dissolving of synaptonemal complex	(iii)	G_2 -phase
d.	Centromeres do not separate but chromatids move towards opposite poles	(iv)	Anaphase-I
		(v)	Diplotene

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

50. The enzyme recombinase is required at which stage of meiosis
- (1) Pachytene
 - (2) Zygotene
 - (3) Diplotene
 - (4) Diakinesis



ANSWER KEY

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



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