Yakeen NEET 2.0 2026

Practice Sheet

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Cell Cycle and Cell Division

Q1 In meiosis, crossing over is initiated at;
(A) zygotene. (B) diplotene.
(C) pachytene. (D) leptotene.

Q2 Among eukaryotes, replication of DNA takes place in;
(A) M phase. (B) S phase.
(C) G_1 phase. (D) G_2 phase.

Q3 Which one of the following **never** occurs during mitotic cell division?
(A) Movement of centrioles towards opposite poles
(B) Pairing of homologous chromosomes
(C) Condensation of the chromatids
(D) Spindle fibers attach to kinetochores of chromosomes

Q4 The appearance of recombination nodules on homologous chromosomes during meiosis characterises:
(A) Bivalent.
(B) Sites at which crossing over occurs.
(C) Terminalisation.
(D) Synaptonemal complex.

Q5 Select the **incorrect** statement with reference to mitosis.
(A) Spindle fibers attach to centromere of chromosomes.
(B) Chromosomes decondense at telophase.
(C) Splitting of centromere occurs at anaphase.
(D) All the chromosomes lie at the equator at metaphase.

Q6 Which of the following stage of meiosis involves splitting of centromere?
(A) Anaphase II (B) Telophase II
(C) Metaphase I (D) Metaphase II

Q7 During which stage, bivalent chromosomes are clearly appears as tetrad?
(A) Zygotene (B) Leptotene
(C) Diplotene (D) Pachytene

Q8 Given below are two statements: one is labelled as Assertion A and the other is labelled as Reason R:
Assertion A: The average duration of cell cycle in humans is 24 hours.
Reason R: The cell division in human cells lasts for only about an hour.
In the light of above statements, choose the **correct** answer from the options given below:
(A) A is true but R is false.
(B) A is false but R is true.
(C) Both A and R are true and R is the correct explanation of A.
(D) Both A and R are true but R is NOT the correct explanation of A.

Q9 The process of appearance of recombination nodules occurs at which sub stage of prophase I in meiosis?
(A) Zygotene (B) Pachytene
(C) Diplotene (D) Diakinesis

Q10 Dissolution of the synaptonemal complex occurs during:
(A) diplotene. (B) leptotene.
(C) pachytene. (D) zygotene.

Q11 Identify the **correct** statement with regard to G_1 phase (Gap I) of interphase.

(A) Cell is metabolically active, grows but does not replicate its DNA
(B) Nuclear division takes place
(C) DNA synthesis or replication takes place
(D) Reorganisation of all cell components takes place

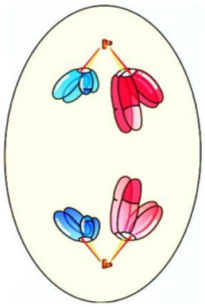
Q12 During cell division, four haploid cells are formed at the end of:
(A) meiosis II. (B) meiosis I.
(C) mitosis. (D) prophase II.

Q13 Cytokinesis in plant cells takes place by _____.
(A) cell plate formation.
(B) multinucleate condition called syncytium.
(C) appearance of furrow in the plasma membrane.
(D) formation of a simple precursor called furrow.

Q14 Given below are two statements:
Statement I: During G_0 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:
(A) Statement I is correct but Statement II is incorrect.
(B) Statement I is incorrect but Statement II is correct.
(C) Both Statement I and Statement II are correct.
(D) Both Statement I and Statement II are incorrect.

Q15 The phase between two successive M phases is:
(A) interphase.
(B) S Phase
(C) G1 phase
(D) quiescent phase.

Q16 Identify the **correct** stage of cell division shown in the following diagram.



(A) Prophase-I (B) Metaphase-I
(C) Anaphase-I (D) Telophase-I

Q17 Given below are two statements: one is labelled as Assertion A and the other is labelled as Reason R:
Assertion A: In the S phase during cell cycle the new DNA molecules formed are not distinct but intertwined.
Reason R: Prophase in M phase is marked by the initiation of condensation of chromosomal material.
In the light of the above statements, choose the **correct** answer from the options given below:
(A) A is true but R is false.
(B) A is false but R is true.
(C) Both A and R are true and R is the correct explanation of A.
(D) Both A and R are true but R is not the correct explanation of A.

Q18 In some organisms, multinucleate condition arises leading to the formation of syncytium because:
(A) karyokinesis is not followed by cytokinesis.
(B) cytokinesis is not followed by karyokinesis.
(C) mitosis is not followed by karyokinesis.
(D) meiosis is not followed by mitosis.

Q19 Given below are two statements:
Statement I: M phase is the most dramatic period of the cell cycle.
Statement II: Prophase is the first stage of interphase.
In the light of the above statements, choose the most appropriate answer from the options given below.

(A) Statement I is correct but Statement II is incorrect.
(B) Statement I is incorrect but Statement II is correct.
(C) Both Statement I and Statement II are correct.
(D) Both Statement I and Statement II are incorrect.

Q20 Find the **mismatched** pair.
(A) Interphase - represents the phase between two successive M phases.
(B) Yeast cells - Divide in about every 90 minutes.
(C) Human cells in culture - Divide in every 120 minutes.
(D) M Phase - Phase of cell cycle when the actual cell division occurs.

Q21 The last stage of meiotic prophase I is marked by:
(A) splitting of bivalents.
(B) disappearance of recombination nodules.
(C) dissolution of synaptonemal complex.
(D) terminalisation of chiasmata.

Q22 Identify the stage of karyokinesis in which the condensation of chromosomes is completed.
(A) Telophase. (B) Metaphase.
(C) Prophase. (D) Anaphase.

Q23 Bivalent is formed during:
(A) pachytene. (B) diplotene.
(C) zygotene. (D) diakinesis.

Q24 Select the **correct** statements.
A. Tetrad formation is seen during leptotene.
B. During anaphase, the centromeres split and chromatids separate.
C. Terminalisation takes place during pachytene.
D. Nucleolus, Golgi complex and ER are reformed during telophase.
E. Crossing over takes place between sister chromatids of homologous chromosome.
Choose the **correct** answer from the options given below:
(A) A and C only
(B) B and D only
(C) A, C and E only
(D) B and E only

Q25 During mitosis, ER and nucleolus begin to disappear at:
(A) late prophase.
(B) early metaphase.
(C) late metaphase.
(D) early prophase.

Q26 During cell division in apical meristem, the nuclear membrane appears in:
(A) telophase. (B) cytokinesis.
(C) metaphase. (D) anaphase.

Q27 Match **List-I** with **List-II**.

List-I		List-II	
(A)	Pachytene	(I)	Terminalisation of chiasmata
(B)	Zygotene	(II)	Chromosomes start pairing together
(C)	Diplotene	(III)	Appearance of recombination nodules
(D)	Diakinesis	(IV)	Dissolution of the synaptonemal complex

Choose the **correct** answer from the options given below:
(A) A-IV, B-II, C-III, D-I
(B) A-III, B-II, C-IV, D-I
(C) A-II, B-I, C-IV, D-III
(D) A-I, B-IV, C-III, D-II

Q28 Chromosomes cluster at opposite spindle poles and their identity is lost as discrete elements in;
(A) Anaphase. (B) Telophase.
(C) Metaphase. (D) Prophase.

Q29 Morphology of chromosomes is most easily studied during;
(A) prophase. (B) metaphase.
(C) anaphase. (D) telophase.

Q30 Find the **correct** stage sequence of mitosis (karyokinesis).

(A) Prophase → Anaphase →Metaphase → Telophase
(B) Prophase → Metaphase →Telophase → Anaphase
(C) Prophase → Metaphase →Anaphase → Telophase
(D) Telophase → Anaphase →Metaphase → Prophase

Q31 Which of the following is the most dramatic period of the cell cycle?
(A) G_1-phase (B) G_2-phase
(C) S-phase (D) M-phase

Q32 Given below are two statements:
Statement I: In animals, mitotic cell division is only seen in the diploid somatic cells.
Statement II: During the G_2 phase, proteins are synthesised in preparation for mitosis while cell growth continues.
In the light of the above statements, choose the *most appropriate* answer from the option below:
(A) Statement I is incorrect but Statement II is correct
(B) Statement I is correct but Statement II is incorrect.
(C) Both Statement I and Statement II are correct.
(D) Both Statement I and Statement II are incorrect.

Q33 In which phase of karyokinesis, the sister chromatids separate?
(A) Prophase (B) Metaphase
(C) Anaphase (D) Telophase

Q34 Identify the **incorrect** statement.
(A) Interkinesis is generally short lived.
(B) Replication of DNA takes place during interkinesis.
(C) Telophase I is the last stage of meiosis I.
(D) Prophase II is much simpler than prophase I.

Q35 Match **List-I** with **List-II**.

List-I		List-II	
A.	M phase	I.	Actual cell division
B.	G_2 phase	II.	DNA replication begins
C.	S phase	III.	Quiescent stage
D.	G_0 phase	IV.	Preparation for mitosis

Choose the **correct** answer from the option given below:
(A) A-II, B-I, C-IV, D-III
(B) A-I, B-IV, C-II, D-III
(C) A-III, B-II, C-IV, D-I
(D) A-IV, B-II, C-I, D-III

Q36 Which one is **incorrect** about G_1 phase?
(A) It occurs between M and S phase
(B) In it cells are metabolically active and continuously grow
(C) It is pre-synthetic or post mitotic phase
(D) In this phase DNA replicates

Q37 Spindle fibres attach on to;
(A) centromere of the chromosome.
(B) centrosome of the chromosome.
(C) telomere of the chromosome.
(D) kinetochore of the chromosome.

Q38 The replication of DNA and duplication of centrioles in cytoplasm take place in;
(A) G_1 phase. (B) G_2 phase.
(C) S-phase. (D) M-phase.

Q39 How many chromosomes are present in each onion root tip cell?
(A) 12 (B) 14
(C) 16 (D) 20

Q40 Arrange the following events of meiosis in the correct sequential order, starting from the initial stage to the later stage:
A. Separation of homologous chromosomes
B. Exchange of genetic material
C. Formation of synaptonemal complex
D. Appearance of chiasmata
Choose the most appropriate answer from the options given below
(A) C → B → D → A
(B) B → C → D → A
(C) C → D → B → A

(D) D → B → C → A

Q41 Find the **incorrect** one about quiescent stage.
(A) The cells that do not divide further exit G_1 phase to enter an inactive stage (G_0).
(B) Cells in this stage becomes metabolically inactive
(C) Cells in G_0 stage no longer proliferate unless called on to do so.
(D) Heart cells in the adult animals do not appear to exhibit division.

Q42 During the cell-cycle, which of the following event(s) take place?
(A) A cell duplicates its genome
(B) Synthesises the other constituents of the cell
(C) Eventually cell divides into two daughter cells.
(D) All of these

Q43 Given below are two statements: one is labelled as Assertion A and the other is labelled as Reason R:
Assertion (A) : Cell cycle duration in human cells is 24 hours approximately while in Yeast, it is about 90 minutes.
Reason (R) : The duration of cell cycle can vary from organism to organism and also from cell type to cell type.
In the light of the above statements, choose the **correct** answer from the options given below:
(A) A is true but R is false.
(B) A is false but R is true.
(C) Both A and R are true and R is the correct explanation of A.
(D) Both A and R are true but R is NOT the correct explanation of A.

Q44 Yeast can progress through the cell cycle in about;
(A) 90 seconds. (B) 90 minutes.
(C) 90 hours. (D) 45 minutes.

Q45 In meiosis, the dyad of cells is formed in cytokinesis after;
(A) telophase I. (B) anaphase I.
(C) metaphase I. (D) prophase I.

Q46 Chromosomes moved to spindle equator and get aligned along _____ plate through spindle fibres to both poles.
(A) prophase (B) metaphase
(C) anaphase (D) telophase

Q47 Find the **incorrect** statement.
(A) M-Phase involves a major reorganisation of virtually all components of the cell.
(B) Cell-division is a progressive process and very clear-cut lines cannot be drawn between various stages.
(C) Prophase is marked by the initiation of condensation of chromosomal material
(D) The centrosome duplicate during G1 phase of interphase.

Q48 Given below are two statements: one is labelled as Assertion A and the other is labelled as Reason R:
Assertion (A): Plants can show mitotic divisions in both haploid and diploid cells.
Reason (R): The growth of multicellular organisms and all unicellular organisms is due to mitosis.
In the light of the above statements, choose the **correct** answer from the options given below:
(A) A is true but R is false.
(B) A is false but R is true.
(C) Both A and R are true and R is the correct explanation of A.
(D) Both A and R are true but R is NOT the correct explanation of A.

Q49 During which phase of cell division nucleolus, golgi body and endoplasmic reticulum reappears?
(A) Anaphase
(B) Prophase
(C) Telophase
(D) Metaphase

Q50 The parental cell cytoplasm of a cell divides into two daughter cells by the process of;
(A) Karyokinesis (B) Cytokinesis

(C) Interkinesis (D) Syncytium

Q51 Given below are two statements: one is labelled as Assertion A and the other is labelled as Reason R:
Assertion (A): Meiosis increases the genetic variability in the population of organisms from one generation to the next.
Reason (R): Meiosis results in reduction of chromosome number by half.
In the light of the above statements, choose the **correct** answer from the options given below:
(A) A is true but R is false.
(B) A is false but R is true.
(C) Both A and R are true and R is the correct explanation of A.
(D) Both A and R are true but R is NOT the correct explanation of A.

Q52 Cytokinesis takes place in;
(A) Animal cells only
(B) Plant cells only
(C) Both animal and plant cells
(D) Unicellular organisms only

Q53 Cell-plate represents which layer during plant cell cytokinesis?
(A) Primary cell wall
(B) Middle lamella
(C) Plasma membrane
(D) Secondary cell wall

Q54 The enzyme recombinase is required at which stage of meiosis?
(A) Pachytene (B) Zygotene
(C) Diplotene (D) Diakinesis

Q55 Which of the following change is **not** found in meiosis II?
(A) The nuclear membrane disappears
(B) Chromosomes again become compact
(C) Formation of bivalents
(D) The nuclear membrane reappears

Q56 Match **List-I** with **List-II.**

List-I		List-II	
(A)	Prophase I	(I)	Splitting of centromere
(B)	Prophase II	(II)	Typically longer and more complex than mitotic prophase
(C)	Telophase I	(III)	Initiates after a short lived intermediate stage
(D)	Anaphase II	(IV)	Followed by cytokinesis

Choose the **correct** answer from the options given below:
(A) A-III, B-I, C-II, D-IV
(B) A-III, B-II, C-I, D-IV
(C) A-II, B-III, C-IV, D-I
(D) A-II, B-III, C-I, D-IV

Q57 If the initial amount of DNA is denoted as 2C during cell cycle, then by the end of S phase it:
(A) increases to 4C.
(B) increases to 8C.
(C) remain same
(D) decreases to 1C.

Q58 Given below are two statements:
Statement-I: The division of cytoplasm is called cytokinesis.
Statement-II: Karyokinesis represents division of nucleus in all organisms.
In the light of the above statements, choose the most appropriate answer from the options given below:
(A) Statement I is correct but Statement II is incorrect.
(B) Statement I is incorrect but Statement II is correct.
(C) Both Statement I and Statement II are correct.
(D) Both Statement I and Statement II are incorrect.

Q59 Haploid cells also divide by mitosis in;
(A) All plants and all animals
(B) All plants but in a few animals
(C) Some lower plants and some social insects

(D) Some higher plants and some vertebrates

Q60 Mitosis usually results in the production of:
(A) diploid daughter cells with different genetic complement.
(B) haploid daughter cells with identical genetic complement.
(C) diploid daughter cells with identical genetic complement.
(D) haploid daughter cells with different genetic complement.

Q61 Given below are two statements:
Statement-I: Meiosis is specialised kind of cell division that reduces the chromosome number by half results in the production of haploid daughter cells.
Statement-II: Meiosis ends with telophase-II, in which two groups of chromosomes once again get enclosed by a nuclear envelope.
In the light of the above statements, choose the most appropriate answer from the options given below:
(A) Statement I is correct but Statement II is incorrect.
(B) Statement I is incorrect but Statement II is correct.
(C) Both Statement I and Statement II are correct.
(D) Both Statement I and Statement II are incorrect.

Q62 Mitosis is characterised by _____
(A) reduction division.
(B) equal division.
(C) both reduction and equal division.
(D) pairing of homologous chromosomes.

Q63 Cell plate is formed during:
(A) cytokinesis in plant cells.
(B) karyokinesis in plant cells.
(C) cytokinesis in animal cells.
(D) karyokinesis in animal cells.

Q64 Match **List-I** with **List-II**.

List-I		List-II	
(A)	M phase	(I)	Proteins are synthesised in preparation for mitosis
(B)	S phase	(II)	Most of the organelle duplication
(C)	G_1 phase	(III)	Duplication of centrosome in animal cell
(D)	G_2 phase	(IV)	Most dramatic period of the cell cycle

Choose the **most appropriate** answer from the options given below:
(A) A-IV, B-III, C-I, D-II
(B) A-IV, B-III, C-II, D-I
(C) A-IV, B-II, C-III, D-I
(D) A-II, B-I, C-IV, D-III

Q65 Given below are two statements: one is labelled as Assertion A and the other is labelled as Reason R:
Assertion A: Plants show continuous growth throughout their life.
Reason R: Mitotic divisions occurs in the meristematic tissues – the apical and the lateral cambium.
In the light of the above statements, choose the **correct** answer from the options given below:
(A) A is true but R is false.
(B) A is false but R is true.
(C) Both A and R are true and R is the correct explanation of A.
(D) Both A and R are true but R is NOT the correct explanation of A.

Q66 Identify the **incorrect** statement.
(A) DNA synthesis occurs only during one specific stage in the cell cycle.
(B) Yeast can progress through the cell cycle in only about 90 minutes.
(C) The M Phase represents the phase when the actual cell division or mitosis occurs.

(D) Cytokinesis lasts more than 95% of the duration of cell cycle.

Q67 Match **List I** with **List II.**

List-I		List-II	
(A)	Mitosis	(I)	Nuclear division
(B)	Meiosis	(II)	Equational division
(C)	Karyokinesis	(III)	Cytoplasmic division
(D)	Cytokinesis	(IV)	Reduction division

Choose the **most appropriate** answer from the options given below:

(A) A-II, B-I, C-IV, D-III

(B) A-II, B-III, C-IV, D-I

(C) A-II, B-IV, C-I, D-III

(D) A-II, B-III, C-I, D-IV

Q68 Diplotene stage of prophase I is recognised by the;

(A) terminalisation of chiasmata.

(B) dissolution of the synaptonemal complex.

(C) appearance of recombination nodules.

(D) formation of the synaptonemal complex.

Q69 From the given set of the stages, how many are present in interphase?

Gap-1 phase, metaphase, anaphase, telophase, S- phase.

(A) Two (B) Three

(C) Four (D) One

Q70 Match the **List-I** with **List-II.**

List-I		List-II	
(A)	Prophase	(I)	Nuclear envelope reappears
(B)	Metaphase	(II)	Chromosomes align at the equator
(C)	Telophase	(III)	Chromosomes start condensing
(D)	Anaphase	(IV)	Chromatids separate

Choose the **correct** answer from the options given below.

(A) A-III, B-II, C-I, D-IV

(B) A-II, B-IV, C-I, D-III

(C) A-IV, B-I, C-III, D-II

(D) A-IV, B-II, C-III, D-I

Answer Key

Q1	(C)
Q2	(B)
Q3	(B)
Q4	(B)
Q5	(A)
Q6	(A)
Q7	(D)
Q8	(D)
Q9	(B)
Q10	(A)
Q11	(A)
Q12	(A)
Q13	(A)
Q14	(B)
Q15	(A)
Q16	(C)
Q17	(D)
Q18	(A)
Q19	(A)
Q20	(C)
Q21	(D)
Q22	(B)
Q23	(C)
Q24	(B)
Q25	(D)
Q26	(A)
Q27	(B)
Q28	(B)
Q29	(B)
Q30	(C)
Q31	(D)
Q32	(C)
Q33	(C)
Q34	(B)
Q35	(B)
Q36	(D)
Q37	(D)
Q38	(C)
Q39	(C)
Q40	(A)
Q41	(B)
Q42	(D)
Q43	(C)
Q44	(B)
Q45	(A)
Q46	(B)
Q47	(D)
Q48	(A)
Q49	(C)
Q50	(B)
Q51	(D)
Q52	(C)
Q53	(B)
Q54	(A)
Q55	(C)
Q56	(C)
Q57	(A)
Q58	(C)
Q59	(C)
Q60	(C)

Q61 (C)
Q62 (B)
Q63 (A)
Q64 (B)
Q65 (C)
Q66 (D)
Q67 (C)
Q68 (B)
Q69 (A)
Q70 (A)