Yakeen NEET 2.0 2026

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Cell Cycle and Cell Division

DPP: 2

Q1 At what stage of the cell cycle are histone proteins synthesized in a eukaryotic cell?
(A) During G_2 phase of prophase
(B) During S phase
(C) During entire prophase
(D) During telophase

Q2 How many of the following events, belong to S-phase of cell cycle?
A. Doubling of amount of DNA per cell
B. Initiation of DNA replication
C. Division of centrioles
D. Synthesis of proteins for cell division
(A) None (B) One
(C) Two (D) Three

Q3 "Post-mitotic phase" of the cell in which active synthesis of RNA and proteins takes place is;
(A) S-phase (B) Amitotic phase
(C) G_2-phase (D) G_1-phase

Q4 During cell cycle, RNA and protein synthesis takes place in:
(A) G_1 phase.
(B) Metaphase.
(C) M - phase.
(D) Cytokinesis.

Q5 Identify the **correct** statement with regard to G_1 phase (Gap 1) of interphase.
(A) Reorganisation of all cell components takes place.
(B) Cell is metabolically active, grows but does not replicate its DNA.
(C) Nuclear division takes place.
(D) DNA synthesis or replication takes place.

Q6 The amount of DNA in a somatic cell in G_2 stage is $10\mathrm{pg}$. The amount of DNA in its G_1 stage would be:
(A) $5\mathrm{pg}$.
(B) $10\mathrm{pg}$.
(C) $20\mathrm{pg}$.
(D) $15\mathrm{pg}$.

Q7 Which of the following phases represents the interval between M phase and initiation of DNA replication?
(A) G_0 phase (B) G_1 phase
(C) G_2 phase (D) S phase

Q8 The fruit fly has 8 chromosomes $(2n)$ in each cell. During interphase of mitosis if the number of chromosomes at G_1 phase is 8 , what would be the number of chromosomes after S phase?
(A) 16 (B) 4
(C) 32 (D) 8

Q9 Assertion: Interphase is called as resting phase.
Reason: Interphase represents the phase between two successive M phases.
(A) Both assertion and reason are true and reason is correct explanation of assertion.
(B) Both assertion and reason are true and reason is not correct explanation of assertion.
(C) Assertion is true, but reason is false.
(D) Assertion is false, but reason is true.

Q10 During cell cycle, the interval between mitosis and initiation of DNA replication:
I. is metabolically active.
II. involves cell growth.
III. involves centriole duplication.
IV. involves DNA replication.
Choose the **correct** answer from the options given below.
(A) I and II only
(B) II and III only

(C) II and IV only
(D) III and IV only

Q11 Cell growth is a continuous process in terms of
(A) cytoplasmic increase
(B) increase in DNA content
(C) increase in protein content
(D) increase in total cellular contents

Q12 In the somatic cell cycle
(A) In G_1 phase, DNA content is double the amount of DNA present in the original cell.
(B) DNA replication takes place in S-phase
(C) a short interphase is followed by a long mitotic phase.
(D) G_2 phase follows mitotic phase

Q13 Which of the following statement(s) is/are correct about S-phase (synthetic phase) ?
(i) It occurs between G_1 and G_2 phase.
(ii) It marks the period during which DNA replicates.
(iii) At the end of this phase, DNA is doubled but the number of chromosomes remains unchanged.
(iv) As the DNA is doubled in this phase number of chromosomes is also doubled.
(v) Centrioles replicate in this phase.
(vi) A mount of DNA changes from $2C$ to $4C$.
(A) (i), (ii), (iv), (v), (vi)
(B) (i), (ii), (iii), (v), (vi)
(C) All of the above
(D) Only (iv)

Q14 The sequence of events by which a cell duplicates its genome, synthesises the other constituents of the cell and eventually divides into two daughter cells is termed as
(A) cell division
(B) cell cycle
(C) cell growth
(D) cell duplication

Q15 Which of the following cannot be found during a study of cell cycle?
(A) Diploid cells found in the G_0 or G_1 phase.
(B) Cells with twice the normal DNA content in the early M phase.
(C) Cells with chromosome number doubled in the S phase.
(D) Cells with twice the normal DNA content in the G_2 phase.

Q16 Identify the **correct** sequence of a cell cycle?
(A) $\mathrm{M} \rightarrow \mathrm{G}_2 \rightarrow \mathrm{G}_1 \rightarrow \mathrm{S}$
(B) $\mathrm{S} \rightarrow \mathrm{G}_2 \rightarrow \mathrm{G}_1 \rightarrow \mathrm{M}$
(C) $\mathrm{G}_1 \rightarrow \mathrm{S} \rightarrow \mathrm{G}_2 \rightarrow \mathrm{M}$
(D) $\mathrm{M} \rightarrow \mathrm{S} \rightarrow \mathrm{G}_1 \rightarrow \mathrm{G}_2$

Q17 Directions : In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as :
Assertion : G1 phase is the interval between mitosis and initiation of DNA replication.
Reason : The cell is metabolically inactive during G1
(A) If both assertion and reason are true and reason is the correct explanation of assertion.
(B) If both assertion and reason are true but reason is not the correct explanation of assertion.
(C) If assertion is true but reason is false.
(D) If assertion is false but reason is true.

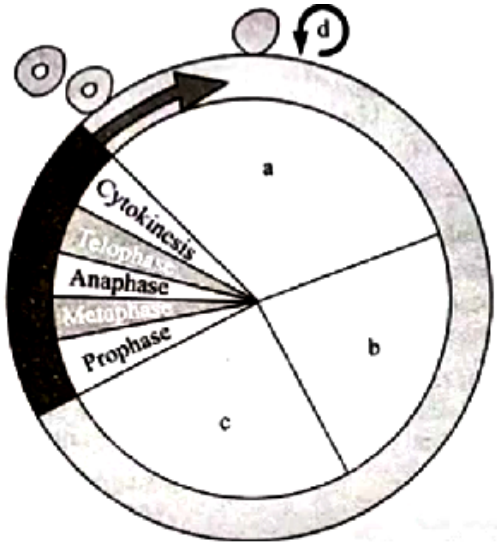
Q18 Match List - 1 with List - 2

	List-1		List-2
A.	*S* phase	(i)	Proteins are synthesized
B.	G_2 phase	(ii)	Inactive phase
C.	Quiescent stage	(iii)	Interval between mitosis and initiation of DNA replication
D.	G_1 phase	(iv)	DNA replication

Choose the correct answer from the options given below.
(A) A-iv B-ii C-iii D-i
(B) A-iv B-i C-ii D-iii
(C) A-ii B-iv C-iii D-i
(D) A-iii B-ii C-i D-iv

Q19

Recognise the figure and find out the correct matching.



(A) a-G_1, b-S, c-G_2, d-M
(B) a-G_1, b-S, c-G_2, d-G_0
(C) a-M, b-G_1, c-S, d-G_2
(D) a-G_0, b-G_1, c-S, d-G_2

Answer Key

Q1	(B)
Q2	(D)
Q3	(D)
Q4	(A)
Q5	(B)
Q6	(A)
Q7	(B)
Q8	(D)
Q9	(B)
Q10	(A)
Q11	(A)
Q12	(B)
Q13	(B)
Q14	(B)
Q15	(C)
Q16	(C)
Q17	(C)
Q18	(B)
Q19	(B)