

Section A

- Write the answer of the following questions. [Each carries 1 Mark] [20]
- Meiosis in diploid organisms results in

(A) Production of gametes	(B) Reduction in the number of chromosomes
(C) Introduction of variation	(D) all of the above
 - A bivalent of meiosis-I consists of

(A) Two chromatids and one centromere	(B) Two chromatids and two centromere
(C) Four chromatids and two centromere	(D) Four chromatids and four centromere
 - Cells which are not dividing are likely to be at

(A) G_1	(B) G_2	(C) G_0	(D) S phase
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 - Identify the wrong statement about meiosis

(A) Pairing of homologous chromosomes
(B) Four haploid cells are formed
(C) At the end of meiosis the number of chromosomes are reduced to half
(D) Two cycle of DNA replication occurs
 - Select the correct statement about G_1 phase.

(A) Cell is metabolically inactive
(B) DNA in the cell does not replicate
(C) It is not a phase of synthesis of macromolecules
(D) Cell stops growing
 - The stage of short duration between interphase and division is called

(A) G_a	(B) G_B	(C) G_r	(D) G_0
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 - The time duration of cell cycle of is comparatively less / small.

(A) Human	(B) Yeast	(C) Dog	(D) Monkey
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 - In phase of interphase, genetic material is doubled.

(A) G_1	(B) G_2	(C) S	(D) (A) and (B) both
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 - Appearance of bivalent state of chromosomes is a main characteristic of phase.

(A) Diplotene	(B) Zygotene	(C) Pachytene	(D) Dikinesis
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 - When is interphase seen ?

(A) In the beginning of cell division	(B) At the end of division in daughter cell
(C) Between two divisions	(D) A, B, C all three
 - The end time changes of prophase can be considered inverse changes of phase.

(A) Beginning of prophase	(B) Metaphase
(C) Telophase	(D) Anaphase
 - It can be considered as an important event for evolution.

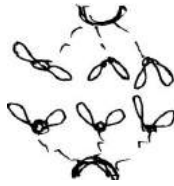
(A) Crossing over	(B) Cytokinesis	(C) Interphase	(D) Synapsis
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 - Statement X : First prophase of meiosis is complex.
 Statement Y : There are 5 sub stages in first prophase.
 Statement Z : Prokaryotic cell divides only for one.

- (A) Statement X, Y correct, Z incorrect
 (C) Statement X, Z correct, Y incorrect

- (B) Statement X, Y incorrect, Z correct
 (D) Statement Y, Z correct, X incorrect

14. Identify the given stage

- (A) Metaphase of mitosis
 (B) Anaphase of mitosis
 (C) Metaphase-I of meiosis
 (D) Anaphase-I of meiosis



15. A : Chromosomes are duplicated well before cell division begins.

R : In order ensure that daughter cells have identical genetical information about their structure and functioning.

- (A) A and R both are correct and R is correct explanation of A.
 (B) A and R are correct but R is not correct explanation of A.
 (C) A is correct and R is false.
 (D) Both A and R are false.

16. Match the following with respect to meiosis :

Column-I	Column-II
(a) Zygotene	(i) Terminalization
(b) Pachytene	(ii) Chiasmata
(c) Diplotene	(iii) Crossing over
(d) Diakinesis	(iv) Synapsis

Select the correct option from the following :

- (A) (a - iv) (b - iii) (c - ii) (d - i) (B) (a - i) (b - ii) (c - iv) (d - iii)
 (C) (a - ii) (b - iv) (c - iii) (d - i) (D) (a - iii) (b - iv) (c - i) (d - ii)

17. The correct sequence of phases of cell cycle is :

- (A) $G_1 \rightarrow S \rightarrow G_2 \rightarrow M$ (B) $M \rightarrow G_1 \rightarrow G_2 \rightarrow S$
 (C) $G_1 \rightarrow G_2 \rightarrow S \rightarrow M$ (D) $S \rightarrow G_1 \rightarrow G_2 \rightarrow M$

18. Match List-I with List-II :

List-I	List-II
(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) (b) (c) (d)
 (A) (iv) (i) (ii) (iii)
 (B) (ii) (iv) (iii) (i)
 (C) (iii) (ii) (i) (iv)
 (D) (iv) (ii) (iii) (i)

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19. Which stage of meiotic prophase shows terminalisation of chiasmata as its distinctive feature ?

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

20. Some dividing cells exit the cell cycle and enter vegetative inactive stage. This is called quiescent stage (G_0). This process occurs at the end of :

- (A) G_1 phase (B) S phase (C) G_2 phase (D) M phase



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