Chapter:10 Cell Cycle and Cell Division

True and False			
Q.No	Question	Answer True/ False	Typology
Q.1	Sequence of events by which cell duplicates its genome and cell divides is referred as cell cycle.	True	Knowledge
Q.2	Metaphase stage chromosomes are used to study the structure of chromosomes.	True	Application
Q.3	Crossing over is an enzyme mediated process.	True	Understanding
Q.4	Some cells which don't divide enter into an inactive stage, known as quiescent stage.	True	Knowledge
Q.5	Mitosis is also known as reductional division.	False	Understanding
Q.6	Centromere holds together two chromatids of a chromosome.	True	Knowledge
Q.7	Mitosis helps in the production of recombinants.	False	Understanding
Q.8	Nucleolus, Golgi complex and ER reform during Telophase.	True	Understanding
Q.9	During cytokinesis, formation of cell plate occurs both in plant and animal cells.	False	Knowledge
Q.10	It takes 6 mitotic divisions for a parent cell to produce 64 cells.	True	E&A
Q.11	Dissolution of synaptonemal complex marks the beginning of diplotene phase.	True	Understanding
Q.12	Synapsis occurs during leptotene stage of prophase I.	False	Understanding
Q.13	Chiasmata are visible in Pachytene stage of prophase I.	False	Knowledge
Q.14	Interkinesis is observed between two phases of meiosis.	True	Knowledge
Q.15	Recombination of genetic material of the two chromosomes is the result of crossing over.	True.	Understanding
Q.16	Syncytium occurs when karyokinesis is not followed by cytokinesis.	True	Understanding

Q.17	Meiotic division occurs in meristematic tissues.	False	Understanding
Q.18	Cell division occurs for growth, repair and production of energy in an organism.	False	Application

Multiple Choice Questions

Q.No	Question	Answer	Typology
Q.1	Cell cycle in Yeast can progress in about: A. 60min B. 120min C. 90min D. 40min	C- 90 min	Knowledge
Q.2	Replication of DNA occurs in: A. G_1 phase B. S phase C. G_2 phase D. M phase	B- S phase	Knowledge
Q.3	Duplication of centriole occurs in the: A. Nucleus B. Cytoplasm C. Nucleolus D. Vacuole	B- cytoplasm	Understanding
Q.4	Correct sequence of cell cycle is: A. $G_1 \rightarrow G_2 \rightarrow S \rightarrow M$ B. $S \rightarrow G_1 \rightarrow G_2 \rightarrow M$ C. $G_2 \rightarrow G_1 \rightarrow S \rightarrow M$ D. $G_1 \rightarrow S \rightarrow G_2 \rightarrow M$	D - $G_1 \rightarrow S \rightarrow G_2 \rightarrow M$	Understanding

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Q.5	The period between two successive mitotic divisions is called: A. Interphase B. M phase C. G0 phase D. G1 phase	A -Interphase	Understanding
Q.6	A diploid cell on mitosis forms A. haploid daughter cells B. diploid daughter cells C. polyploid daughter cells D. triploid daughter cells	B – diploid	Knowledge
Q.7	A pair of synapsed homologous chromosome is visible in: A. Leptotene B. Zygotene C. Diplotene D. Diakinesis	B – Zygotene	Knowledge
Q.8	The two cells formed after Meiosis I are known as: A. Dyad B. Tetrad C. Bivalent D. Meiocyte	A - Dyad	Knowledge
Q.9	The movement of chromosomes towards poles occur in- A. Metaphase B. Anaphase C. Telophase D. Prophase	B - Anaphase	Understanding
Q.10	Precursor of middle lamella between the walls of two adjacent plant cells is- A. cell plate B. cell furrow C. plasmodesmata D. Cell membrane	A – cell plate	Understanding
Q.11	The pairing of homologous chromosomes is called- A. tetrads B. crossing over C. synapsis D. Fusion	C – synapsis	Understanding
Q.12	In germinal cells, cell cycle has: A. 2 successive mitotic divisions B. 2 successive reduction divisions C. very short prophase in first division D. 1 reduction division followed by 1 mitotic division	D – 1 reduction division followed by 1 mitotic division.	Understanding

Q.13	If 16 spermatids are produced, the number of cells in which meiosis occurred would be- A. 32 B. 8 C. 4 D. 2	C - 4	Application
Q.14	In meiosis daughter cells are not similar to their parent cells; because- A. prophase is the longest phase B. Meiosis is completed in two phases C. nucleus size increases in daughter cells D. crossing over takes place and chromosome number is halved.	D – Crossing over takes place and chromosome number is halved.	Application
Q.15	If a plant has 2n=60 chromosomes; in metaphase I the number of chromosome pairs at equatorial plate will be- A. 60 B. 30 C. 120 D. 180	B - 30	Application
Q.16	Metaphase of mitosis is similar to metaphase II of meiosis except: A. half number of chromosomes. B. same number of chromosomes. C. nucleolus is absent. D. homology of chromosomes if formed.	A – Half number of chromosomes.	Understanding
Q.17	The genetic variations and evolution of new species is due to: A.Diplotene of prophase I B. Pachytene of prophase I C. Anaphase II D. Anaphase I	B – Pachytene of prophase I	Understanding
Q.18	Following are the characteristics of mitosis in somatic cells except: A. Spindle fibers B. attachment of spindle fibres to kinetochores C. Synapsis D. Movement of chromosomes.	C- synapsis	Understanding
Q.19	If the initial amount of DNA is 2C; after synthetic phase amount of DNA will be- A. C B. 2C C. 4C D. 8C	C – 4C	Application

Q.20	DNA duplication occurs in A. G_1 phase B. S phase C. G_2 phase D. M phase	B – S phase	Understanding

Fill in the Blanks

Q.No	Question	Answer	Typology
Q.1	The process of division of the nucleus is called _____.	Karyokinesis	Knowledge
Q.2	Interphase has 3 stages; G_1phase, _____ and G_2 phase.	S phase	Knowledge
Q.3	In oocytes of some vertebrates, cells get arrested in _____ stage of prophase I.	diplotene	Understanding
Q.4	The X- shaped structures called _____ occur ate the site of cross overs.	Chiasmata	Understanding
Q.5	The dissolution of _____ complex marks the beginning of diplotene.	Synaptonemal	Knowledge
Q.6	The enzyme involved in crossing over is called _____.	recombinase	Knowledge
Q.7	The final stage of meiotic prophase I is _____.	diakinesis	Knowledge
Q.8	A multinucleated condition called _____ arises when karyokinesis is not followed by cytokinesis.	syncytium	Understanding
Q.9	In animal cells, _____ is achieved by the formation of furrow in the plasma membrane.	Cytokinesis	Knowledge
Q.10	The chromosomes are aligned on the equatorial plate at the _____ stage of mitosis.	metaphase	Knowledge

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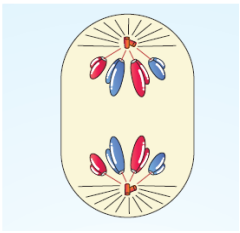
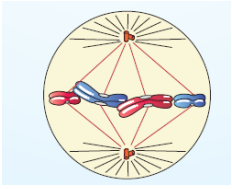
Match the Following

Q.No			Answer		Typology
Q.1	Column A a.cytokinesis b.karyokinesis	Column B i)Division of nucleus ii)Division of nucleolus iii)Division of cytoplasm iv)Division of protoplasm	Column A a. b.	Column B iii) i)	Knowledge
Q.2	Column A a.G1 phase b. S phase	Column B i)centriole duplication ii)condensation of chromosomal material iii) synthesis of ATP, nucleotides and proteins iv)crossing over	Column A a. b.	Column B iii) i)	Understanding
Q.3	Column A a.mitosis b.meiosis	Column B i)amitosis ii)reductional division iii)plasmogamy iv)equational division	Column A a. b.	Column B iv) ii)	Understanding
Q.4	Column A a.Prophase b.Metaphase	Column B i)movement of chromatids towards poles ii)spindle fibres attach to kinetochores iii)initiation of assembly of mitotic spindle iv)splitting of centromere	Column A a. b.	Column B iii) ii)	Knowledge

Q.5	Column A a.synaptonemal complex b.terminalisation of chiasmata	Column B i)leptotene ii)diplotene iii)zygotene iv)diakinesis	Column A a. b.	Column B iii) iv)	Understanding
Q.6	Column A a.phase that represents transition to metaphase I b.phase when dissolution of synaptonemal complex occurs	Column B i)pachytene ii)diplotene iii)diakinesis iv)anaphase I	Column A a. b.	Column B iii) ii)	Understanding
Q.7	Column A a.Gametic meiosis b.Zygotic meiosis	Column B i)direct division ii)haplontic cycle iii)amitosis iv)diplontic cycle	Column A a. b.	Column B iv) ii)	E&A
Q.8	Column A a.nuclear membrane reappears b.nucleus is active but chromosomes are not distinct	Column B i)interphase ii)telophase iii)metaphase iv)prophase	Column A a. b.	Column B ii) i)	Understanding
Q.9	Column A a.  b. 	Column B i)prophase ii)metaphase iii)anaphase iv)telophase	Column A a. b.	Column B iii) ii)	Knowledge

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Q.10	Column A a.meiosis I b.meiosis II	Column B i)homologous chromosomes separate ii)somatic cell division iii)sister chromatids separate iv)amitosis	Column A a. b.	Column B i) iii)	Understanding