BIOLOGY

BOOKS - NIKITA PUBLICATION

Cell Division

Exercise

1. During which division nucleus becomes elongated, constricts in the middle becomes

dumbbell, shaped and divides to form two daughter nuclei.

A. amitosis

B. mitosis

C. meiosis

D. sporic meiosis

Answer:

2. In which division does not show equal distribution of chromatin material

A. mitosis

B. amitosis

C. meiosis

D. sporic meiosis

Answer:

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3. In Ameoba multiple fission occurs by.. Paramecium division of meganucleus takes place by...

A. amitosis, amitosis

B. mitosis, meiosis

C. amitosis, mitosis

D. meiosis, mitosis

Answer:

4. The division of mitochondria and chloroplasts is

A. mitosis

B. meiosis

C. amitosis

D. psuedomitosis

Answer:

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5. The series of sequential changes through which cell passes duringits growth and divi sion is called a

A. cell elogation

B. cell maturation

C. cell cycle

D. cell multi plication

Answer:

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6. The average duration of cell cycle of a human & Yeast are

A. 24 dyas, 90 minutes

B. 24 minutes, 90 minutes

C. 24 hours, 90 minutes

D. 24 seconds, 90 minutes

Answer:

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7. Cell cycle of human consist of

A. interphase (95%) 23 hours

B. M phase (5%) 1 hours

C. meiosis (95%) 23 hourse

D. both a and b

Answer:

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8. The so called resting phase is not really a resting phase. What is that phase and the period between two successive nuclear divisions is called as

A. interphase

B. mitosis

C. meiosis

D. amitosis

Answer:

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9. In .... Phase nucleus appears to be physically resting hence called as resting phase but it is metabolically most active in the cell cycle.

A. M phase

B. interphase

C. meiosis

D. amitosis

Answer:

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10. All the molecules needed by the cell for division are synthesized during ... and non dividing & preparatory phase of cell cycle is

A. Mphase

B. meiosis

C. interphase

D. amitosis

Answer:

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11. Interphase is divided into three sub phases except

A. G1 phase

B. S phase

C. G2 phase

D. G0 phase

Answer:

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12. G1 phase is also called as

A. pre-DNA synthesis

B. first growth period or first gap period

C. post mitotic phase

D. all of these

Answer:

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13. In G1 phase synthesis of all takes place except

A. cell becomes metabolically active, mRNA, rRNA, ribosomes and proteins

B. Enzymes required for DNA replication

C. nucleotides and ATP are kept ready

D. DNA duplication takes place

Answer:

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14. Time taken for completion of G1 phase is about....

A. 20%-30% of total cycle

B. 30%-40% of total cycle

C. 50%-60% of total cycle

D. 60%-70% of total cycle

Answer:

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15. The regulation of duration of cell cycle is arrested at middle of G1 phase. This is said to be

A. M phase

B. G2

C. S phase

D. G0

Answer:

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16. All of the following takes place in S phase except

A. amount of DNA unchanged

B. DNA duplicates, amount of DNA becomes double in nucleus 2C to 4C but chromosome number remain unchanged

C. centriole duplicates in the cytoplasm

D. Histone proteins are synthesized

Answer:

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17. At the end of S phase each chromosome has

A. One chromatid

B. four chromatids joined by centromere

C. two chromatids joined by centromere

D. No change in chromatid number

Answer:

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18. The chromosome number in Gl,S and G2 phases are

A. 2n, 2n, 2n

B. 2n, 4n, 2n, chromatid number becomes double and then reduced

C. 2n, 2n, 2n, but chromatid number double

D. 4n, 2n, 2n

Answer:

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19. Which of the following is called as second growth phase or gap phase or Which phase is called as post DNA synthesis phase or premitotic phase of cell cycle

A. G1

B. G2

C. S phase

D. G0

Answer:

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20. In which phase cell organelles and spindle proteins are synthesized

A. G1

B. G0

C. G2 phase

D. S phase

Answer:

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21. Actual period of cell division in cell cycle is

A. G1

B. M phase

C. G2 phase

D. S phase

Answer:

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22. The cell may withdraw from cell cycle after mitosis or cell do not exhibit division like heart cell and it will enter into

A. G0 phase/quiescent phase before S phase

B. M phase before S phase

C. G2 phase before S phase

D. both a and b

Answer:

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23. Statements (A) In animal cell mitotic division takes place in diploid, somatic cells (B) In plant cell mitotic division takes place in diploid and haploid cells (C) The neurons, heart muscles do not divide

A. A, B, correct C wrong

B. B, C correct A wrong

C. A, C correct, B wrong

D. A, B, C correct

Answer:

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24. Histones are synthesized in

A. prophase

B. G1 phase

C. S phase

D. metaphase

Answer:

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25. M phase is also called as

A. resting phase

B. Preparatory phase

C. metabolically active phase

D. mitotic/meiotic phase

Answer:

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26. Abnormal, unlimited and uncontrolled cell division results in

A. pleurisy

B. cancer

C. totipotency

D. asphyxia

Answer:

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27. Which one of the following statement is correct

A. Walter Fleming discovered meiosis in plant cells

B. Walter Fleming discovered mitosis in plant cells

C. Walter Fleming discovered emeiosis in animal cells

D. Walter Fleming discovered mitosis in animal cells

Answer:

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28. In the cell cycle

A. Interphase is followed by Division phase

B. Division phase is not followed by interphase

C. Interphase, Division phase both start at a time

D. Interphase, Division phase not related with one another

Answer:

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29. Which of the following is true for mitosis?

A. distinct centrioles to form spindle body in animal cell

B. centrioles are absent in plant cell and celled as acentric

C. chromosome number remain same so called equational division

D. all of these

Answer:

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30. Mitosis is also called as somatic division because

A. mostly takes place in somatic cells

B. common in germ calls

C. mostly takes place in cells having odd chromosome number

D. it takes place in somatic cells only

Answer:

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31. Which of the following is called as growth division?

A. M phase

B. meiosis

C. interphase

D. mitosis

Answer:

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32. Which phase is marked by the initiation of condensation, to form compact mitotic chromosomes

A. Metaphase

B. prophase

C. anaphase

D. telophase

Answer:

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33. During prophase which is not possible

A. chromosomal arm splits longitudinally into two chromatids

B. Nuclear envelope and Nucleolus disappear

C. centriole move towards opposite pole

D. Chromosome become chromatids

Answer:

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34. In Spiralization

A. Chromosomes become long and thread like

B. Chromosomes become short and thick

C. Chromosome are scattered

D. Chromosome show uneven thickenings

Answer:

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35. Read the following statement? (A) Two sister chromatids are held together by centromere. (B) small disc shaped structure at the surface of centromere are called as kinetochore (C) These structures serve as site attachment of spindle fibres to chromosome

A. A, B, correct C wrong

B. A, C, correct B wrong

C. A,B,C, correct

D. B, C correct a wrong

Answer:

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36. Which of the following Is true?

A. the metaphase is characterised by all the chromosomes coming to lie at the equator

B. one chromatid of each chromosoem connected by its kinetochore of spindle fibres from one pole and its sister chromatid connected by its kinetochore to spindle fibers from the opposite pole

C. The plane of alignment of the chromosome at metaphase is reffered to

as the metaphase plate

D. all of these

Answer:

37. The spindle fibres get attached to

A. centrosome

B. kinetochore

C. centriole

D. none of these

Answer:

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38. In animal cell spindle fibre are made up of 97%.... type of protein

A. actin

B. myosin

C. tubulin

D. albumin

Answer:

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39. Star like radiating fiber & are formed around each centriole called as

A. centrosome

B. spindle pole

C. spindle body

D. astral rays

Answer:

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40. Which of the following are true

A. in animal cell astral mitosis is common

B. in plant cell anastral mitosis common

C. stare like radiating fibres are not formed in plant cell

D. all of these

Answer:

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41. Which of the following is true?

A. chromosomal fibres originate at one pole and extend to the equator where they get attached to the centromeres of the chromosomes

B. continous fibers extend between two poles

C. Interzonal fibers appears between chromatids at anaphase

D. all of these

Answer:

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42. In late prophase.... Disappears

A. Nucleolus disappear

B. nuclear membrane

C. Cell cytoskeleton, golgi complex, ER

D. all of these

Answer:

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43. In which phase condensation of chromosome is completed and chromosome becomes visible, morphology can be easily

studies they can be observed clearly under the microscope

A. prophase

B. Metaphase

C. anaphase

D. telophase

Answer:

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44. Chromosomes are migrated towards equator and get arranged at equator of spindle to form single metaphase plate in.....phase.

A. Prophase

B. Metaphase

C. anaphase

D. telophase

Answer:

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45. In Metaphasic plate

A. Chromatids of the chromosomes are arranged in one line

B. Centromeres of the chromosome are arranged in one line

C. Chromatids and centromeres of the chromosomes are arranged in one line

D. Centromeres of the chromosome float in the cytoplasm freely

Answer:

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46. In which stage of cell division the counting of chromosome can be done

A. Metaphase

B. Zygotene

C. Diplotene

D. Diakinasis

Answer:

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47. Which phase is of short duration

A. Prophase

B. Metaphase

C. anaphase

D. telophase

Answer:

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48. The movement of chromosomes is dependent on

A. asters

B. association of spindle fibres with centromere

C. contraction of continous fibres

D. repulsion in genetic material of chromosomes

Answer:

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49. During anaphase, movement of daughter chromosome towards the poles is due to

A. Pressure developed in the centromere

B. Contraction of spindle fibres

C. Repulsion between the chromosomes

D. Both b and c

Answer:

50. In Anaphase, the chromosomes attain different shapes. It is due to the

A. contraction of spindle fibres

B. Pressure developed in the centromere

C. Position of centromere

D. Movement of chromosomes towards the poles

Answer:

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51. The number of chromatids present in a chromosome during Anaphase of Mitosis

A. 1

B. 2

C. 4

D. Many

Answer:

52. Centromere splits and chromatids or daughter chromosomes separate ... phase of mitosis

A. Prophase

B. Metaphase

C. anaphase

D. telophase

Answer:

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53. Centromere is concerned with

A. Splitting of chromosome

B. Movement of chromosome to poles

C. Attachment spindle fibres

D. b and c

Answer:

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54. Despiralisation takes place during

A. Prophase

B. Metaphase

C. anaphase

D. telophase

Answer:

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55. Which one is not possible due to mitosis ?

A. Wound healing

B. Regeneration

C. growth

D. Reduction of chromosome number

Answer:

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56. Region of chromosomes where force is exerted during separation of chromatids of dividing chromosomes

A. interzonal fibres

B. Centromere

C. poles of spindle body

D. Telomere

Answer:

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57. During the movement of the chromosomes in anaphase to the poles the is

A. centromeres lie ahead followed by chromosomal arms

B. chromsomal arms followed by centromere

C. centromeres and chromosomal arm lie at same line

D. only daughter chromosome pulled to poles

Answer:

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58. The changes occuring inTelophase are completely reverse to that of

A. anaphase

B. Prophase

C. Metaphase

D. interkinesis

Answer:

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59. In which phase.the reconstruction of two daughter nuclei takes place

A. anaphase

B. Prophase

C. Metaphase

D. telophase

Answer:

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60. Nuclear membrane and nucleolous reappears, Golgi complex and ER etc. reform in ....phase

A. anaphase

B. telophase

C. Metaphase

D. Prophase

Answer:

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61. Pick out the wrong pair

A. Anaphase-division of centromere

B. Metaphase-chromosome clearly appears

C. Prophase- despiralization

D. Telophase-chromosome become thin, long

Answer:

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62. Find out the correct match

List - 1	List - 2
A) Prophase	I. two daughter nuclei formed
B) Metaphase	II. Daughter chromosome pulled to opposite pole
C) Anaphase	III. Counting of chromosomes
D) Telophase	IV. Nuclear membrane, nucleolous disappear

A. IV III II I

B. III II IV II

C. II IV III I

D. IV II III I

Answer:

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63. Division of cytoplasm i.e. cytokinesis name proposed by

A. Flemming

B. Whitman

C. Strasburger

D. R. Virchow

Answer:

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64. During cytokinesis, cell plate is formed from

A. Cytoplasm

B. asters

C. Golgi complex

D. Cell wall

Answer:

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65. A barrel shaped structure organized by remaining spindle fibres at the interzonal region is called

A. leucoplast

B. chromoplast

C. Phragmoplast

D. amyloplast

Answer:

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66. The form of cell plate that represents middle lamella formed from phragmoplast during cytokinesisis

A. Solid

B. Semil-solid

C. Liquid

D. Not in any form

Answer:

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67. The cell plate grows in ... manner in cytokinesis of plant cell

A. centrifugal manner

B. centripetal manner

C. partly centripetal and partly centrifugal

D. acropetal

Answer:

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68. In animal cell cytokinesis takes place by ....& cytokinesis of animal cell furrow formation take splace in..... manner

A. cell wall formation, centripetal manner

B. cell plate formation, centrifugal manner

C. furrow formation, centripetal manner

D. phragmoplast formation, centrifugal manner

Answer:

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69. In some organisms karyokinesis is not followed by cytokinesis as a result of which multinucleate condition e.g.liquid endosperm of coconut arises leading to the formation of

A. multinucleate syncytium

B. uninucleate syncytium

C. binucleate conenocytic

D. multinucleate aseptate

Answer:

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70. Cell division of vegetative cell or somatic cell is .....type

A. Mitosis

B. meiosis

C. Both Mitosis, Meiosis

D. amitosis

Answer:

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71. The cell division helpful in the reproduction of unicellular organisms

A. Meiosis

B. Mitosis

C. Meiosis or Mitosis

D. Endomitosis

Answer:

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72. How many generations time of mitotic divisions occur in a cell of root tip to form 256 cells

A. 8

B. 64

C. 16

D. 128

Answer:

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73. How many mitotic divisions occur in a cell of the root tip to form 256 cells

A. 8

B. 255

C. 64

D. 32

Answer:

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74. Which cell division is responsible for growth, repair and maintenance.

A. Meiosis

B. amitosis

C. mitosis

D. none of these

Answer:

75. In mitosis newly formed cells are

A. morphologically and genetically similar

B. morphologically dissimilar and genetically similar

C. morophologically similar and genetically dissimilar

D. morophologically and genetically dissimilar

Answer:

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76. The term meiosis was coined by

A. Strasburger

B. Flamming

C. Whitemen

D. Farmer and Moore

Answer:

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77. Read the statements (A) Meiosis is a special kind of cell division which occurs in the zygote of algae (B) Meiosis is a special kind of cell division which occurs in the spore mother cells of bryophyte to higher plants (C) Meiosis is a special kind of cell division which occurs in the primary spermatocyte and oocyte during gamete formation in animals

A. A, B, correct C wrong

B. A, C, correct B wrong

C. A, B, C correct

D. B, C correct A wrong

Answer:

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78. The cells in which meiosis occurs are called

A. mitocytes

B. meiocytes

C. amitocytes

D. bud cells

Answer:

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79. As the chromosome number is reduced to the half of its original number meiosis is called as

A. equational division

B. reductional division

C. equatorial division

D. divisional responsible for growth

Answer:

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80. In meiosis newly formed cells are

A. morophologically and genetically similar

B. morophologically dissimilar and genetically similar

C. morophologically similar and genetically dissimilar

D. morophologically and genetically dissimilar

Answer:

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81. Why new daughter cells produced by meiosis are genetically dissimilar?

A. prophase is longer

B. during anaphase-I reduction occurs

C. recombination during prophase-I

D. recombination during prophase-II

Answer:

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82. Meiosis never takes place in

A. haploid

B. triploid

C. cell having odd chromosome number

D. all of these

Answer:

83. The daughter cells formed from parent cells during meiosis differ from the parent in their

A. Chromosome number

B. Genetic characters

C. Chromosome number and genetic chracters

D. None of the above

Answer:

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84. Mention the odd man out

A. Strasburger- observed Meiosis in plant cells

B. Farmer & Moore- coined the term Meiosis

C. Fleming-discovered Mitosis in animal cells

D. August Weisman-coined the terms Mitosis

Answer:

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85. Which one of the following is a Meiocyte?

A. Antherezoid mother cell

B. Spore mother cell

C. embryo

D. zygote

Answer:

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86. Which division help to maintain constant chromosome number in the next generation after sexual reproduction

A. Amitosis

B. mitosis

C. meiosis

D. Binary fission

Answer:

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87. Meiosis involves two divisions. These are

A. One nuclear division and other is cytoplasmic

B. one is extranuclear and other is mitotic division

C. One reduction division and other amitotic divison

D. One reductional division and one mitotic division

Answer:

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88. Which of the following is of longer duration

A. Prophase II

B. Prophase-I

C. Anaphase-I

D. telophase-I

Answer:

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89. Prophase with many complex changes appears in

A. Mitosis

B. Meiosis-I

C. Meiosis

D. amitosis

Answer:

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90. In the Leptotene attraction occurs towards centre and between

A. Two paternal chromosomes

B. Two maternal chromosomes

C. One paternal and one maternal chromosomes

D. Two paternal and maternal chromosomes

Answer:

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91. In which phase nucleus appear like bouquet stage (in animals) and syndetic knot (in plants).

A. zygotene

B. leptotene

C. pachytene

D. diplotene

Answer:

92. The active bead like structures are genetic centres present on the chromosomes during leptotene of Meiosis

A. Chromomeres

B. Chromocentres

C. Centromeres

D. Telomeres

Answer:

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93. Read the statements (A) Synapsis is the pairing of homologous chromosomes during zygotene (B) Synapsis is accompanied by

formation of synaptonemal complex (C) The complex formed by a pair of synapsed homologous chromosomes is called a bivalent or a tetrad (D) Thefirst two stages of prophaseI are relatively short-lived compared to the next stage that is pachytene

A. A, B, correct C, D wrong

B. A, C, correct B,D wrong

C. A, B,C,D correct

D. B, C correct A,D wrong

Answer:

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94. In Zygotene, Synapsis starts at

A. Telomeres

B. Centromere

C. Any place of the chromosome

D. Telomeres or Centromeres or any place of the chromosomes

Answer:

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95. In Bivalent

A. a pair of non-sister chromatids are present

B. 2 pairs of non-sister chromatids are present

C. 3 pairs of non-sister chromatids are present

D. 4 pairs of non-sister chromatids are present

Answer:

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96. In Prophase-I pairing of homologous chromosomes takes place to form bivalents. The bivalent consist of

A. Two chromosoem and one centromere

B. Two chromosome and two centromeres

C. Four chromatids and four centromeres

D. Four chromosome and two centromeres

Answer:

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97. Which of the following occurs only during zygotene of prophase-I

A. Pairing of homologous chromosomes

B. Pairing of maternal chromosomes

C. pairing of paternal chromosomes

D. crossing over takes place

Answer:

98. During pachytene all of the following takes place except

A. During this stage bivalent chromosomes now clearly appearsas tetrads

B. This stage is characterised by the appearance of recombination nodules, the sites at which crossing over occurs between non-sister chromatids of the homologous chromosomes

C. Crosssing over is the exchange of genetic material between two homologous chromosomes

D. dissolution of the synaptonemal complex

Answer:

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99. Dissolution of the synaptonemal complex occurs during

A. Diplotene

B. leptotene

C. Pachytene

D. Zygotene

Answer:

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100. 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. S phase

B. G_2 phase

C. M phase

D. G_1 phase

Answer:

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101. Match the following with respect to meiosis

i) Zygotene			p) Terminalization	
ii) Pachytene			q) Chiasmata	
iii) Diplotene			r) Crossing over	
iv) Diakinesis			s) Synapsis	
	'i'	'ii'	'iii'	'iv'
a)	p	q	s	r
b)	q	s	r	p
c)	r	s	p	q
d)	s	r	q	p

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102. The connecting link between Meiosis-I and Meiosis-II is..... .

A. interphase-I

B. interphase-II

C. interkinesis

D. anaphase-I

Answer:

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103. Synapsis is pairing of..... .

A. any two chromosomes

B. non-homologous chromosomes

C. sister chromatids

D. homologous chromosomes

Answer:

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104. Spindle apparatus is formed during which stage of mitosis?

A. Prophase

B. Metaphase

C. Anaphase

D. Telophase

Answer:

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105. Chromosome number of a cell is almost doubled up during..... .

A. G1-phase

B. S-phase

C. G2-phase

D. G0-phase

Answer:

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106. How many chromatids are present in anaphase-I of meiosis-I of a diploid cell having 20 chromosomes?

A. 4

B. 6

C. 20

D. 40

Answer:

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107. In which of the following phase of mitosis chromosomes are arranged at equatorial plane?

A. Prophase

B. Metaphase

C. Anaphase

D. Telophase

Answer:

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108. Find incorrect statement.

A. Condensation of chromatin material occurs in prophase.

B. Daughter chromatids are formed in anaphase

C. Daughter nuclei are formed at metaphase

D. Nuclear membrane reappars in telophase

Answer:

109. Histone proteins are synthesized during..... .

A. G1-phase

B. S-phase

C. G2-phase

D. Interphase

Answer:

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110. Match the following column-A with column-B.

Column-A (phases)	Column-B (Their events)
a. Leptotene	1. Crossing over
b. Zygotene	2. Desynapsis
c. Pachytene	3. Synapsis
d. Diplotene	4. Bouquet stage

A. a-4, b-3, c-1, d-2

B. a-2, b-3, c-1, d-4

C. a-3, b-4, c-1, d-2

D. a-4, b-3, c-2, d-1

Answer:

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111. In Ameoba multiple fission occurs by.. Paramecium division of meganucleus takes place by...

A. amitosis, amitosis

B. mitosis, meiosis

C. amitosis, mitosis

D. meiosis, mitosis

Answer:

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112. The average duration of cell cycle of a human & Yeast are

A. 24 days, 90 minutes

B. 24 minutes, 90 minutes

C. 24 hours, 90 minutes

D. 24 seconds, 90 minutes

Answer:

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113. All the molecules needed by the cell for division are synthesized during ... and non dividing & preparatory phase of cell cycle is

A. M phase

B. meiosis

C. interphase

D. amitosis

Answer:

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114. Interphase is divided into three sub phases except

A. G1-phase

B. S phase

C. G2-phase

D. G0-phase

Answer:

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115. In G1 phase synthesis of all takes place except

A. cell becomes metabolically active, mRNA, rRNA, ribosomes and proteins

B. Enzymes required for DNA replication

C. nucleotides and ATP are kept ready

D. DNA duplication takes place

Answer:

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116. All of the following takes place in S phase except

A. amount of DNA unchanged

B. DNA duplicates, amount of DNA becomes double in nucleus 2C to 4C but chromosome number remain unchanged.

C. centriole duplicates in the cytoplasm

D. Histone proteins are synthesized

Answer:

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117. The chromosome number in Gl,S and G2 phases are

A. 2n, 2n, 2n

B. 2n, 4n, 2n chromatid number becomes double & then reduced

C. 2n, 4n, 2n but chromatid number double

D. 4n, 2n, 2n

Answer:

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118. In which phase cell organelles and spindle proteins are synthesized

A. G1

B. G0

C. G2 phase

D. S phase

Answer:

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119. The cell may withdraw from cell cycle after mitosis or cell do not exhibit division like heart cell and it will enter into

A. G0 phase/quiescent phase before S phase

B. M phase before S phase

C. G2 phase before S phase

D. both a and b

Answer:

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120. Statements (A) In animal cell mitotic division takes place in diploid, somatic cells (B) In plant cell mitotic division takes place in diploid and haploid cells (C) The neurons, heart muscles do not divide

A. A,B correct C wrong

B. B,C correct A wrong

C. A,C correct, B wrong

D. A,B,C correct

Answer:

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121. Which of the following is true for mitosis?

A. distinct centrioles to form spindle body in animal cell

B. centrioles are absent in plant cell & called as acentric

C. chromosome number remain same so called equational division

D. all of these

Answer:

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122. Mitosis is also called as somatic division because

A. mostly takes place in somatic cells

B. common in germ cells

C. mostly takes place in cells having odd chromosome number

D. it takes place in somatic cells only

Answer:

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123. During prophase which is not possible

A. Prochromosomes become chromosomes, chromosomal arm splits longitudinally into two chromatids

B. Nuclear envelops and Nucleolus disappear

C. centriole move towards opposite pole

D. chromosome become chromatids

Answer:

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124. Read the following statement? (A) Two sister chromatids are held together by centromere. (B) small disc shaped structure at

the surface of centromere are called as kinetochore (C) These structures serve as site attachment of spindle fibres to chromosome

A. A,B correct C wrong

B. A,C correct B wrong

C. A,B,C correct

D. B,C correct A wrong

Answer:

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125. Which of the following are true

A. in animal cell astral mitosis is common

B. in plant cell anastral mitosis common

C. star like radiating fibres are not formed in plant cell

D. all of these

Answer:

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126. Which of the following is true?

A. chromosomal fibres originate at one pole and extend to the equator where they get attached to the centromeres of the chromosomes.

B. continous fibres extend between two poles

C. interzonal fibres appears between chromatids at anaphase

D. all of these

Answer:

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127. In which phase condensation of chromosome is completed and chromosome becomes visible, morphology can be easily studies they can be observed clearly under the microscope

A. Prophase

B. Metaphase

C. Anaphase

D. Telophase

Answer:

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128. In Metaphasic plate

A. chromatids of the chromosomes are arranged in one litre

B. centromeres of the chromosomes are arranged in one litre

C. chromatids and centromeres of the chromosomes are arranged in one litre

D. centromeres of the chromosomes float in the cytoplasm freely

Answer:

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129. Which phase is of short duration

A. Prophase

B. Metaphase

C. Anaphase

D. Telophase

Answer:

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130. During anaphase, movement of daughter chromosome towards the poles is due to

A. Pressure developed in the centromere

B. contraction of spindle fibres

C. Repulsion between the chromosomes

D. Both b & c

Answer:

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131. Centromere splits and chromatids or daughter chromosomes separate ... phase of mitosis

A. Prophase

B. Metaphase

C. Anaphase

D. Telophase

Answer:

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132. Find out the correct match

List - 1	List - 2
A) Prophase	I. two daughter nuclei formed
B) Metaphase	II. Daughter chromo some pulled to opposite pole
C) Anaphase	III. Counting of chro mosomes
D) Telophase	IV. Nuclear membrane, nucleolous disappear

	A	B	C	D
a)	IV	III	II	I
b)	III	II	IV	II
c)	II	IV	III	I
d)	IV	II	III	I

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133. A barrel shaped structure organized by remaining spindle fibres at the interzonal region is called

A. leucoplast

B. chromoplast

C. phragmoplast

D. amyloplast

Answer:

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134. In animal cell cytokinesis takes place by ....& cytokinesis of animal cell furrow formation take splace in..... manner

A. cell wall formation, centripetal manner

B. cell plate formation, centrifugal manner

C. furrow formation, centripetal manner

D. phragmoplast formatiomn, centrifugal manner

Answer:

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135. How many mitotic divisions occur in a cell of the root tip to form 256 cells

A. 128

B. 255

C. 64

D. 32

Answer:

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136. In mitosis newly formed cells are

A. morphologically & genetically similar

B. morphologically dissimilar & genetically similar

C. morphologically similar & genetically dissimilar

D. morphologically & genetically dissimilar

Answer:

137. In meiosis newly formed cells are

A. morphologically & genetically similar

B. morphologically dissimilar & genetically similar

C. morphologically similar & genetically dissimilar

D. morphologically & genetically dissimilar

Answer:

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138. Why new daughter cells produced by meiosis are genetically dissimilar?

A. prophase is longer

B. during anaphase-1 reduction occurs

C. recombination during prophase-1

D. recombination during prophase-II

Answer:

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139. Meiosis involves two divisions. These are

A. One nuclear division and other is cytoplasmic

B. one is extranuclear and other is mitotic

C. one reduction division and other amitotic

D. one reductional division and one mitotic division

Answer:

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140. Which of the following is of longer duration

A. prophase

B. Prophase-I

C. Anaphase-I

D. telophase-I

Answer:

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141. Read the statements (A) Synapsis is the pairing of homologous chromosomes during zygotene (B) Synapsis is accompanied by formation of synaptonemal complex (C) The complex formed by a pair of synapsed homologous chromosomes is called a bivalent or a tetrad (D) Thefirst two stages of prophaseI are relatively short-lived compared to the next stage that is pachytene

A. A,B correct C wrong

B. A,C correct B wrong

C. A,B,C, D correct

D. B,C correct A,D wrong

Answer:

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142. Meiosis results in

A. production of gametes

B. reduction in the number of chromosomes

C. introduction of variation

D. all of the above

Answer:

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143. At which stage of meiosis does the genetic constitution of gametes is finally decided

A. Metaphase I

B. Anaphase II

C. Metaphase II

D. Anaphase I

Answer:

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144. Meiosis occurs in organisms during

A. sexual reproduction

B. vegetative reproduction

C. both sexual and vegetative reproduction

D. none of the above

Answer:

Watch Video Solution

145. During anaphase-I of meiosis

A. homologous chromosomes separate

B. non-homologous autosomes separate

C. sister chromatids separate

D. non-sister chromatids separate

Answer:

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146. Mitosis is characterised by

A. reduction division

B. equal division

C. both reduction and equal division

D. none of the above

Answer:

Watch Video Solution

147. 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

Answer:

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148. Cells which are not dividing are likely to be at

A. G1

B. G2

C. G0

D. S phase

Answer:

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149. Which of the events listed below is not observed during mitosis?

A. chromatin condensation

B. movement of centrioles to opposite poles

C. appearance of chromosomes with two chromatids joined together at the centromere

D. crossing over

Answer:

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150. Identify the wrong statement about meiosis.

A. pairing of homologous chromosomes

B. four haploid cell are formed

C. at the end of meiosis the number of chromosomes are reduced to half

D. two cycle of DNA replication occurs

Answer:

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151. Select the correct statement about G1 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

Answer:

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Example

1. What is the difference between growth of non-living material and living organism?

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2. Which are the steps of Mitosis?

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3. Why mitosis is called as equational division?

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4. Why meiosis is called as reductional division?

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5. The chromosome number is actually reduced in which phase of meiosis?

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6. How many daughter cells are produced in mitosis & meiosis.

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7. How many spindle bodies are produced in mitosis & meiosis.

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8. The mitosis can be best studied in which plant?

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9. Which division is responsible for growth.

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10. Which cell division responsible for recombination & variations.

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11. What is cell cycle?

Watch Video Solution

12. Which processes occur during Interphase?

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13. While"observing a slide,student observed many cells with nuclei. But some of the nuclei were bigger as compared to others but their nuclear membrane was not so clear. Teacher inferred it as one of the phase in the cell division. Which phase may be inferred by teacher?

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14. Students prepared a slide of onion root tip.There were many cells seen under microscope. There was a cell with two groups of chromosomes moving towards opposite ends of the cell. This cell is in which phase of mitosis?

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15. Some Mendelian crossing experimental results were shown to the students. Teacher

informed that there are two genes located on the same chromosome. He inquired if they will be ever separated from each other?

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16. Is the meiosis responsible for evolution? Justify your answer.

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17. Why mitosis and meiosis-II are called as homotypic division?

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18. What is the role of centrioles in the formation of spindle apparatus?

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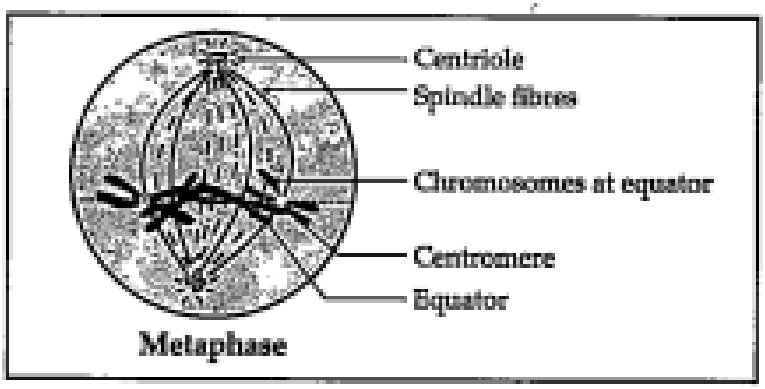
19. Is a given figure correct? Why?



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20. Enlist the different stages of prophase-I.

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21. If an onion has 16 chromosomes in its leaf cell, how many chromosomes will be there in its root cell and pollen grains.

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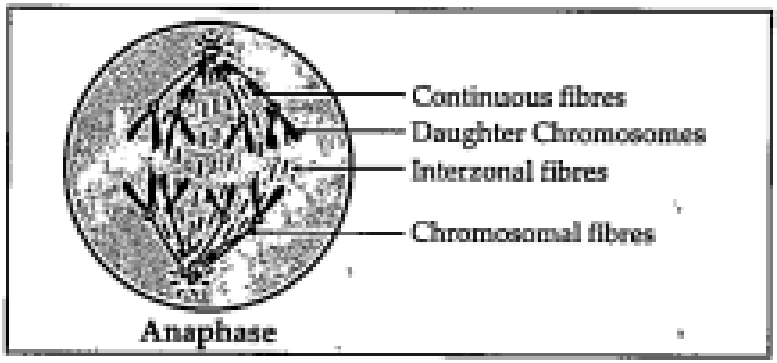
22. Identify the following phases of mitosis and label the 'A' and 'B' given in diagrams.



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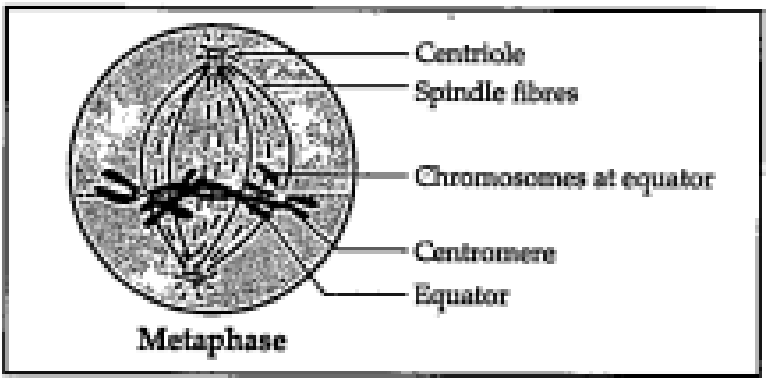
23. Identify the following phases of mitosis and label the 'A' and 'B' given in diagrams.



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24. Between a prokaryote and a eukaryote, which cell has a shorter cell division time?

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25. Which of the phases of cell cycle is of longest duration?

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26. Name a stain common used to colour chromosomes?

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27. Which tissue of animals and plants exhibits meiosis?

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28. Given that the average duplication time of E. coli is 20 minutes how much time will two E.coli cells take to become 32 cells?

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29. Which part of the human body should one use to demostrate stages in mitosis?

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30. What attributes does a chromatid require to be classified as a chromosomes?

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31. The diagram shows a bivalent at prophase-I of meiosis. Which of the four chromatids can cross over?

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32. If a tissue has 1024 cells at a given time, how many cycles of mitosis had the original parental single cell undergone?

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33. An anther has 1200 pollen grains. How many pollen mother cells must have been there to produce them?

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34. At what stage of cell cycle does DNA synthesis take place?

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35. It is said that the one cycle of cell division in human cells (eukaryotic cells) takes 24 hours. Which phase of the cycle, do you think occupies the maximum part of cell cycle?

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36. It is observed that heart cells do not exhibit cell division. Such cells do not divide further and exist_____phase to enter an

inactive stage called_____of cell cycle. Fill in the blanks.

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37. In which phase of meiosis are the following formed? Choose the answer from hint points given below:

Synaptonemal complex_____

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38. In which phase of meiosis are the following formed? Choose the answer from hint points given below:

Recombination nodules_____

Watch Video Solution

39. In which phase of meiosis are the following formed? Choose the answer from hint points given below:

Appearance/activation of_____enzyme recombinae.

Watch Video Solution

40. In which phase of meiosis are the following formed? Choose the answer from hint points given below:

Termination of chiasmata_____.

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41. In which phase of meiosis are the following formed? Choose the answer from hint points given below:

Interkinesis_____

Watch Video Solution

42. In which phase of meiosis are the following formed? Choose the answer from hint points given below:

Formation of dyad of cells_____

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43. How do your wounds heal?

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44. Cell cycle contain how many phases?

Watch Video Solution

45. What is exact structure of Synaptonemal complex.

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46. What is structure of chiasmata?

Watch Video Solution

47. Which types of proteins are involved in formation of spindle fibres?

Watch Video Solution

48. What would have happened in absence of meiosis?

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49. Write the significance of Mitosis.

Watch Video Solution

50. Draw the diagram of metaphase.

Watch Video Solution

51. Students were observing, a film on Paramoecium. But underwent a process of reproduction. Teacher said it's due to cell division. But Students objected and said that there was no disappearance of nuclear membrane and no spindle formation, how can it be cell division?-"Can you clarify?

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52. State the role of centrioles other than spindle formation.


Watch Video Solution

53. Mitochondria and plastids have their own DNA (genetic material). What is known about their fate during nuclear division like mitosis?


Watch Video Solution

54. Label the diagram and also determine the stage at which this structure is visible.

Watch Video Solution

55. A cell has 32 chromosomes. It undergoes mitotic division. What will be the chromosome number (N) during metaphase? What would be the DNA content (C) during anaphase?

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56. While examining the mitotic stage in a tissue, one finds, some cells with 16 chromosomes and some, with 32 chromosomes. What possible reasons could you assign to this difference in chromosome number. Do you think cells with 16 chromosomes could have arisen from cells with 32 chromosomes or vice versa?

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57. The following events occur during the various phases of the cell cycle, Name the phase against, each of the events.

Disintegration of nuclear membrane_____

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58. The following events occur during the various phases of the cell cycle, Name thephase against, each of the events.

Appearance of nucleolus_____

Watch Video Solution

59. The following events occur during the various phases of the cell cycle, Name thephase against, each of the events.

Division of centromere_____

Watch Video Solution

60. The following events occur during the various phases of the cell cycle, Name

thephase against, each of the events.

Replication of DNA_____

Watch Video Solution

61. Mitosis results in producing two cells which are similar to each other. What would be the consequence if each of the following irregularities occur during mitosis?

Nuclear membrane fails to disintegrate.

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62. Mitosis results in producing two cells which are similar to each other. What would be the consequence if each of the following irregularities occur during mitosis?

Duplication of DNA does not occur.

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63. Mitosis results in producing two cells which are similar to each other. What would be the consequence if each of the following

irregularities occur during mitosis?

Centromeres do not divide.

Watch Video Solution

64. Mitosis results in producing two cells which are similar to each other. What would be the consequence if each of the following irregularities occur during mitosis?

Cytokinesis does not occur.

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65. Both unicellular and multicellular organisms undergo mitosis. What are the differences, if any observed in the process between the two?

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66. Name the pathological condition when uncontrolled cell division occurs.

Watch Video Solution

67. Two key events take place, during S phase in animal cells, DNA replication and duplication of centriole. In which parts of the cell do events occur?

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68. Comment on the statement-Meiosis enables the conservation of specific chromosome number of each species even though the process per se, results in reduction of chromosome number.

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69. Name a cell that is found arrested in diplotene stage for months and years. Comment in 2-3 lines how it completes cell cycle?

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70. How does cytokinesis in plant cells differ from that in animal cells?

Watch Video Solution

71. Why and how some spindle fibres elongate and some contract?

Watch Video Solution

72. Write down the significance of prophase I in your words.

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73. What is the difference between Meiosis-I and Meiosis-II.

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74. Elaborate the process of recombination.

Watch Video Solution

75. With the help of suitable diagram, describe the cell cycle.

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76. Distinguish between Mitosis and Meiosis.

Watch Video Solution

77. Comment on the statement-Telophase is reverse of prophase.

Watch Video Solution

78. What are the various stages fo meiotic prophase-I? Enumerate the chromosomal events during each stage?

Watch Video Solution

79. Differentiate between the events of mitosis and meiosis.

Watch Video Solution

80. Write brief note on the following:

Synaptonemal complex

Watch Video Solution

81. Write brief note on the following:

Metaphase plate

Watch Video Solution

82. Write the significance of Mitosis.

Watch Video Solution

83. An organisms has two pair of chromosomes (i.e., chromosome number) Diagramatically represent the chromosomal arrangement during different phases of meiosis II.

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84. What is the average cell cycle span for a mammalian cell?

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85. What is the G_0 Phase?

Watch Video Solution

86. Distinguish cytokinesis from karyokinesis.

Watch Video Solution

87. Describe the events taking place during interphase.

Watch Video Solution

88. Why mitosis is called as equational division?

Watch Video Solution

89. Name the stage of cell cycle at which one of the folloiwng events occur :

Chromosomes are moved to spindle equator.

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90. Name the stage of cell cycle at which one of the folloiwng events occur :

Centromere splits and chromatids separate.

Watch Video Solution

91. Name the stage of cell cycle at which one of the folloiwng events occur :

Pairing between homologous chromosomes takes place.

Watch Video Solution

92. Name the stage of cell cycle at which one of the folloiwng events occur :

Crossing over between homologous chromosomes takes place.

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93. Describe the following:

Synapsis

Watch Video Solution

94. Describe the following:

bivalent

Watch Video Solution

95. Describe the following:

chiasmata

Watch Video Solution

96. How does cytokinesis in plant cells differ from that in animal cells?

Watch Video Solution

97. Find examples where the four daughter cells from meiosis are equal in size and where they are found unequal in size.

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98. State the significance of meiosis.

Watch Video Solution

99. Distinguish between anaphase of mitosis & Anaphase-I of meiosis.

Watch Video Solution

100. Distinguish between Mitosis and Meiosis.

Watch Video Solution

101. Discuss with your teacher about haploid insects and lower plants where cell-

division occurs

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102. Discuss with your teacher about some haploid cells in higher plants where cell-division does not occur.

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103. Can there be mitosis without DNA replication in S phase?

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104. Can there be DNA replication without cell division?

Watch Video Solution

105. Analyse the events during every stage of cell cycle and notice how the following two parameters change:

Number of chromosomes (N) per cell.

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106. Analyse the events during every stage of cell cycle and notice how the following two parameters change:

Amount of DNA content (C) per cell.

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