1. Who coined term mitosis : -
(1) Fiemming (2) Watson
(3) Thomson (4) Addison

2. DNA synthesis takes place in : -
(1) S phase (2) G1 phase
(3) G2 phase (4) None

3. When pairing occurs in chromosomes (meiosis) : -
(1) Leptotene (2) Zygotene
(3) Pachytene (4) Diakinesis

4. Moste active stage of cell cycle is : -
(1) Prophase (2) Metaphase
(3) Thelopase (4) Interphase

5. Which of the following is the method of cytokinesis on plant cell: -
(1) By cell plate formation
(2) By Constriction
(3) By phragmoplast
(4)(1) and(3) both

6. In which stage of cell cycle nucleus becomes bigger : -
(1) G1 (2) G2
(3) S (4) M

7. What happens in interkinesis: -
(1) DNA-replication
(2) Chromosome duplication
(3) Preparation of second meiotic div.
(4) Resting stage

8. Division of nucleus is indirect in : -
(1) Mitosis (2) Binary fission
(3) Budding (4) Fragmentation

9. Who coined the name " Amitosis" : -
(1) Farmer (2) Remac
(3) Strass burger (4) A. Flemming

10. Which can be observed in an interphase nucleus under the light microscope : -
(1) Chromosomes (2) Nucleosomes
(3) Centromere (4) Heterochromatin

11. Who divided cell cycle in four stages i. e. G1, s, G2 and M : -
(1) W. Flemming (2) Strass burger
(3) Howard and Pelc (4) Farmer

12. How much part of cycle formed by interphase: -
(1) 50% (2) 70%
(3) 10% (4) 90%

13. Angular divergence of spindle decreases at: -
(1) Metaphase (2) Early anaphase
(3) Late anaphase (4) Telophase

14. Minimum number of meiotic div . required : -
(1) 15 (2) 31 (3) 62 (4) 16

15 .In cell cycle , changes of which stage are not visible under microscope : -
(1) Interphase (2) Prophase
(3) Metaphase (4) Anaphase

16. Which type of division leads to polypoidy : -
(1) Cryptomitosis (2) Meiosis
(3) Endomitosis (4) Amitosis

17. Which of the following not occurs in Anaphase –I but occurs in Anaphase -II
(1) Condensation of chromosomes
(2) Poleward movement of chromosomes
(3) Contraction of spindle fibers
(4) Splitting of centromer

18. In Angiosperms, Endomitosis occurs in:-
(1) Ocule (2) Tapetum
(3) Endothecium (4) Leaftip

19. In which stage of cell division , division of matrix of chromosome occurs : -
(1) Late prothase (2) Early metaphase
(3) Late metaphase (4) Anaphase

20. During G2 - phase a diploid cell contains the amount of DNA equal to a : -
(1) Diploid cell (2) Tetraploid cell
(3) Haploid cell (4) Nothing can be aid

21. Crossing over takes place in : -
(1) Zygotene (2) Pachytene
(3) Diplotene (4) Diakinesis

22 Which type of chromosome will appear 'L' – shaped during anaphase : -
(1) Telocentric (2) Acrocentric
(3) Metacentric (4) Submetacentric

23. A contractile mid body forms during cytokinesisin : -
(1) Animals (2) Higher plants
(3) Fungi (4) Algae

24. Which chromosome may lost during cell division : -
(1) Giant chromosome
(2) Acentric chromosome
(3) Polycentric chromosome
(4) Telocentric chromosome

25. In which order, cytokinesis occurs in plants : -
(1) Centripetal (2) Centrifugal
(3) Oblique (4) Equatorial

26. Meiosis not occurs in : -
(1) Ovule (2) Anther
(3) Microsporangia (4) Stoot tip

27. Which of the two events restore the normal number of chromosomes
In life cycle : -
(1) Mitosis and Meiosis
(2) Meiosis and fertilization
(3) Fertilization and mitosis
(4) Only meiosis

28. Division of nucleus is indirect in : -
(1) Mitosis (2) Meiosis
(3) Amitosis (4)(1) and(2) both

29. Number of meiosis required to produce 100 ovules in angiosperms : -
(1) 125 (2) 100 (3) 25 (4) 75

30. Constancy of the chromosome number in sexually producing generation is brought by the process of : -
(1) Meiosis (2) Mitosis
(3) Amitosis (4) None

31. Which element helps in spindle formation : -
(1) Mn (2) Co (3) Pb (4) Ag

32. Which division is characteristic of cartilage cells, meganucleus of **Paramaecium** and foetal membranes: -
(1) Mitosis (2) Meiosis
(3) Cryptomitosis (4) Amitosis

33. Which part to plant is suitable for the study of meiosis : -
(1) Root apex (2) Ovary
(3) Anther (4) Shoot apex

34. Colchicine , a mitotic poison, arrests the cell division in : -
(1) G1 – phase (2) G2 - phase
(3) Anaphase (4) Metaphase

35. Amitosis is characteristic of : -
(1) Higher plants
(2) Higher animals
(3) Bryopyta
(4) Lower organisms

36. Reason of chromosomal movement in Anaphase : -
(1) Astral rays
(2) Centrioles
(3) Kinetochore
(4)Kinetochoreand spindle fobres

37. Nuclear envelope reappears at : -
(1) Metaphase (2) Prophase
(3) Anaphase (4) Telophase

38. Slipping of chiasmata towards the ends of bivalent of nucleus is called : -
(1) Terminalisation (2) Plasmotomy
(3) Endomitosis (4) Reduction div.

39. Duplicaton of chromosomes without the division of nucleus is called ;-
(1) Cytokinesis (2) Plasmotomy
(3) Endomitosis (4) Dino -mitosis

40. Which division maintains genetic similarity : -
(1) Mitosis (2) Meiosis
(3) Amitosis (4) Reduction div.

41. Which does not occurs in prophase : -
(1) Hydration of chromatin
(2) Dehydration of chromation
(3) Appearance of chromosome
(4) Disappearance of nuclear memb . and nucleolus

42. During cell cyccle. RNA and protein synthesis takes place during : -
(1) G1 and G2 – phase (2) S –phase
(3) M- pase (4) Cytokinesis

43. In which steage fo cell division , number of chromosomes best counted : -
(1) Prophase (2) Metaphase
(3) Telopase (4) Interphase

44. The cellular structure which disappear during mitosis is : -
(1)Plasma membrane
(2) Nuclear membrane
(3) Mitochondria
(4) Nuclear membrane and nucleolus

45 Cell division in blue green algae similar to that in : -
(1) Bacteria (2) Brown algae
(3) Green algae (4) Higher plants

46. Meiosis takes place in : -
(1) Apical meristem
(2) Inter calary meristem
(3) Reproductive cells
(4) Vegetative cells

47. Replication of DNA in meiosis occur during : -
(1) S – phase
(2)S–phase and leptotene
(3) S – phase and zygotene(4) All of these

48. The synaptonemal comlex was first observed by : -
(1) Moor (1905)
(2) Farmer and moore (1905)
(3) Mosses (1956)
(4) Flemming (1882)

49. A cell is bound to divide , if it has entered
(1) G2- phase (2)G1- phase
(3) Prophase (4)S- phase

50. How many chromosome shall be present in a diploid cell at mitotic anaphase if its egg cell has ten chromosome : -
(1) 10 (Ten) (2) 20 (Twenty)
(3) 30 (Thirty) (4)40 (Forty)

51. If crossing –over occur at two strand stage then percentage of crossing over is :
(1) 50% (2)60% (3) 70% (4)100%

52 Meiosis which occur at the time of spore formation is called : -
(1) Zygotic meiosis
(2)Haplontic meiosis
(3) Terminal meiosis
(4) Intermed iate meiosis

53. Most fastes type of cell division is
(1) Mitosis (2)Meiosis
(3) Amitosis (4)Endomitosis

54. Chromosome exhibit high level of coilling at which phase of karyokinesis : -
(1) Prophase (2)Metaphase
(3) Telophase (4)Interphase

55. " Bouquet –stage " occur in which aub stages of prophase –I : -
(1) Leptotene (2)Zygotene
(3) Pavhytene (4)Diplotene

56. The synaptonemal complex appeare : -
(1) Between homologous chromosomes
(2) In zygotene stage
(3) Composed of DAN + protein
(4) All the above

57. The phragmoplast is organised : -
(1) At the beginning of anaphase
(2) At the of anaphase
(3) At the beginning of trlophase
(4) At the end of teloppase

58. At anaphase – II of meiosis each chromosome contains: -
(1) 4 DNA (2) 3-DNA
(3) 2-DNA (4) 1-DNA

59. Kinetin (Cytokinin) increase the rate of mitosis by reducing the duration of : -
(1) Interphase (2) Meta phase
(3) Anaphase (4) Telophase

60. Which of the following statement is correct : -
(1) DNA is synthesized through out the cell -cycle
(2) Cell divisionis inhibited by cytokinin
(3) Chromosome arecondensed at S-stage
(4)Only extra chromosomal DNA is replicated at any stage of cell cycle

61. Interzonal fibers occur in : -
(1) Prophase (2) Early metaphase
(3) Lare prophase (4) Anaphase

62. During cell dicision chromosome move towards different poles due to : -
(1) Centriole (2) Vacuole formation
(3) Microtubules (4) Cytokinesis

63. Which one of the following statements is not true for meiosis : -
(1) It occur in reproductive tissue only
(2) Chromosome undergo pairing in early prophase -I
(3) Chromosome donot exchange part
(4) Chromosome do not divide during anaphase -I

64. Terminalistion ' is a process related with : -
(1) Mitosis (2) Meiosis
(3) Diakinesis (4) Telophase -I

65. For studying meiosis the relevant plant material is usually fixed around : -
(1) 9-10 AM (2) 4-5 AM
(3) 3-4 PM (4) 12-PM

66. Tetrad formation in meiosis occurs in : -
(1) Leptotene (2) Zygotene
(3) Pachytene (4) Diplotene

67. In which stage of mitosis , the chromosomes are bivalent i. e. composed of two chromatids : -
(1) Prophase & metaphase
(2) Anaphase and telophase
(3) Prophase and telophase
(4) Metaphase and andphase

68. In plants, meiosis can be observed in : -
(1) Root tip (2) Leaf primordia
(3) Sporangia (4)Manychromatid

69. In Anaphase –I each chromosome composed of : -
(1) One chromatid (2) Two chromatid
(3) Four chromatid (4)Manychromatid

70. Gap between division phase and start of DNA – replication is called : -
(1) G_{1-} phase (2) G_2-phase
(3) M-phase (4) Interkinesis

71. In meiosis, division of centromere occurs during :
(1) Intephase (2) Anaphse - I
(3) Anaphase – II (4) Metaphase - I

72. In animals active mitosis can be observed :
(1) At the base of nails
(2) At the apex of hairs
(3) Dermis of skin (4) Glans

73. In meiosis, nuclear membrane and nucleolus disappear during :
(1) Zygotene (2) Pachytane
(3) Diakinesis (4) Metaphase - I

74. Cell cycle can remain arrested at :
(1) G1 (2) S (3) G2 (4) M

75. Which of the following are mitotic poison :
(1) Colchicine
(2) Mustard gas an Azides
(3) Cyanides (4) All the above

76. Gametic meiosis occurs in :
(1) Higher plants (2) Algae
(3) Animals (4) Bacteria

77. Longest phase of cell cycle is :
(1) Prophase (2) Telophase
(3) G2 (4) G2

78. In cell cycle, which stage is misnomerly called resting phase :
(1) S-phase (2) Telophase
(3) Cytokinesis (4) Interphase

79. Spindile fibers which extend from pole to kinetochores are :
(1) Chromosomal or tractile fibers
(2) Interzonal fibers
(3) Supporint fibers
(4) Astral rays

80. The longest phase in meiotic division is :
(1) Prophase - I (2) Metaphase - I
(3) Prophase - II (4) Anaphase - I

81. Separation of homologous chromosomes during Anaphase - I is called :
(1) Synapsis (2) Disjuction
(3) Nondisjuction (4) Crossing over

82. During cell division, spindle fibers attach to which part of chromosome :
(1) Primary constriction
(2) Sec. Constriction
(3) Chromomere
(4) Chromatid

83. In tetrad, the number of non cross over chromatids is normally :
(1) Four (2) Two (3) One (4) None

84. Term meiosis was conded by :
(1) W. Flemming (2) A, Flemming
(3) Farmer and Moore (4) Boveri

85. Synaptonemalcomplexis characteristic of :
(1) Mitotic chromosomes
(2) Leptotene chromosomes
(3) Paried meiotic chromosomes
(4) Metaphase

86. Germ cells in vertebrate gonads re produced by -
(1) Mitosis (2) Amitosis
(3) Mitosis and meiosis (4) Endomitosis

87. Sporic meiosis occurs in :
(1) Animals
(2) Thallophyta
(3)Bryophyta
(4)Allplantsexepts thallophyta

88. In mitosis, splitting of chromatids upto the centromere takes place in :
(1) Phrophase (2) Metaphase
(3) Anaphase (4) Telophase

89. Peristent nuclear membrane and intranuclear spindle are characteristic of :
(1) Cryptomitosis (2) endomitosis
(3) Free nuclear div (4) Mitosis

90. In which stage of cell division the chromosomes are most condensed :
(1) Prophse (2) Meta phase
(3) Anaphase (4) Telphase

91. If a meristematic cell is placed in a medium containing radio active thymidine, radioactivity will be first observed in :
(1) Euchromatin
(2) Hetero chromatin
(3) Both simultaneously (4) None

92. Karyoplasmic index (K. I.) is :
(1) $\frac{V_n}{V_n - V_c}$ (2) $\frac{V_n}{V_c - V_n}$
(3) $\frac{V_n}{V_n}$ (4) $\frac{V_n}{V_c + V_n}$

93. What happens during growth of a cell :
(1) K. I. decreases
(2) K. I. increases
(3) KI. fluctuates
(4) K. I. remains constant

94. Synthesis of proteins occurs during :
(1) G1 (2) G2 (3) S (4) All the above

95. The metabolism of cell which decrease during porphase again starts increasing during :
(1) Telophse (2) Anaphase
(3) Metaphase (4) G1 - phase

96. Synthesis of cycline protein occur in :
(1) Permanent tissue
(2) Meristem
(3) Lingified cells
(4) All the types of cells

97. The changes of Karyokinesis in mitosis occur in :
(1) Cytoplasm (2) Nucleus
(3) Both 1 and 2 (4) Nucleolus

98. Which of the following not occur during condensation of chromosomes :
(1) Unfolding of protein molecules
(2) Coiling of DNA
(3) Dehydration (4) Hydration

99. During which stage a diploid cell becomes tatraploid in mitosis :
(1) G2 (2) Prophase
(3) metaphase (4) Anaphase

100. Division of centromere occur in :
(1) Late prophase or early metaphase
(2) Late mataphase or early anaphase
(3) Late anaphase or early telophase
(4) Late telophase

101. Which of the following reorganises the nucleolus during telophase -
(1) Sec. constriction –I
(2) Sec. constriction - Ii
(3) Primary constriction
(4) Pore-complex

102. Each chromosome composed of one chromatid in :
(1) Anaphase – I (2) Anaphase - II
(3) Metaphase I (4) Metaphase -II

103. If the number of bivalents are 8 in metaphase - I what shall be the number of chromosomes in daughter cell after meiosis - I and meiosis -Ii respectively :
(1) 8 and 4 (2) 4 and 4
(3) 8 and 8 (4) 16 and 8

104. Arrangement of ascopores in ascus of ***Neurospora*** is 2 + 2 + 2 + 2. What is the number of recombinant type of ascospores :
(1) 2 (2) 4 (3) 6 (4) 8

105. Which of the following not occurs in Anaphase - I
(1)Segregationofhomologouschormosomes
(2) Contraction in spindle
(3) Poleward movement of chromosomes
(4) Division of centromere

106. Homologous chromosomes shows maximum attracting during :
(1) Leptotene (2) Xygotene
(3) Pachytene (4) Diplotene

107. In meiosis :
(1)Division of nucleus twice but replication of DNA only once
(2)Division of nucleus twice and replication of DNA twice
(3)Division of nucleus once and replication of DNA is also once
(4) Division of nucleus once and DNA - replication is twice

108. After meiosis - I the two chromatics of a chromosome are :
(1) Genetically similar
(2) Genetically different
(3) There occurs only one chromatid in each chromosome
(4) None of the above

109. Ribonuclease, a mitotic poison, inhibits cell cycle in :
(1) Interphase (2) Prophase
(3) Metaphase (4) Anaphase

110. The most primitive type of mitosis is :
(1) Amitosis (2) Cryptomitosis
(3) Endomitosis (4) Zygotic mitosis

111. Dinomitosis occur in :
(1) Procaryotes (2) Mesokaryotes
(3) Eucaryotes (4) Akaryotes

112. Genetic information is transferred from zygote to all body cell by :
(1) Meiosis (2) Amitosis
(3) Endomitosis (4) Mitosis

113. Division of cell without recognisable chromosomes is :
(1) Amitosis (2) Mitosis
(3) Meiosis –I (4) Meiosis -II

114. In plants, active mitosis occur in :
(1) Cambium (2) Leaf tip
(3) Root base (4) Mid vein

115. Stain for cell division :
(1) Saffranin (2) Aniline blue
(3) PAS (4) Acetocrmine

116. Terminal meiosis occurs in :
(1) Sporocyte (2) Gametocyte
(3) Zygote (4) Gamete

117. How many microspore mother cells are required to produce 80 male gametes in angiosperms
(1) 10 (2) 20 (3) 40 (4) 80

118. Gap between meisis - I and II is called :
(1) Interphase (2) Interkinesis
(3) Diakinesis (4) Metakinesis

119. In animals, cytokinesis is :
(1) Centrifugal (2) Centripetal
(3) Random (4) Collateral

120. kernplasm theory proposed by :
(1) Harting (2) O. Hertwig
(3) Huxley (4) Steward

121. Rate of cell div. increases by application of :
(1) Cytokinins (2) Auxins
(3) Gibberrellins (4) Colchicine

122. Coilling of chromonema in prophase of mitosis is -
(1) Plectonemic (2) Paranemic
(3) Helical (4) Irregular

123. Chiasmata appears during :
(1) Diakinesis (2) Synaptotene
(3) Diplotene (4) Leptotene

124. Meiosis can take palace in :
(1) Prokaryotic cell (2) Hapolid cell
(3) Dikaryotic cell (4) Diploid cell

125. What happnes in synthesis phaseduring cell cycle :
(1) DNA synthesis
(2) Chromosome number become double
(3) Formation of two nuclei
(4) Synthesis of proteins & RNA

126. Reappearance of nuclear membrane & nucleolus along with thing & elongation in chromosomes are diagnostic character for the phase :
(1) Anaphase (2) Metaphase
(3) Interphase (4) Telophase

127. What happens in crossing over :
(1) Duplication of chromosomes
(2) Limkage in chromosomes
(3) Minimization in genetic material
(4) Exchange of genetic material

128. In mitosis, the spindle is :
(1) Bipolar (2) Multipolar
(3) Apolar (4) Random

129. Site of meiosis Angiosperms :
(1) Meristem (2) Spore Mother cell
(3) Roots (4) Petals or Pollen

130. Syntehsis and storage of ATP molecules required for cell div. takes place in :
(1) Prophase (2) G1 - phase
(3) Anaphase (4) G2-pahse

131. Spindile microtubules composed of :
(1) Actin filament
(2) 95% dyinen and 5% DNA
(3) 95-97% tubulin and 3-5 % RNA
(4) Collagen and elastin protein

132. Each daughter chromosome in anaphase moves towards opposite poles at the speed of 1 μm per minute with the expenditure of energy ;
(1) 5 ATP (2) 30 ATP
(3) 38 ATP (4) 200 ATP

133. Condensation of chromosomes and appearance of astral rays occur during :
(1) prophase (2) Metaphase
(3) Anaphase (4) Telophase

134. Cell plate which appears during cytokinesis, ultimately transforms in :
(1) Middle lamella
(2) Primary wall
(3) Sec. Wall (4)Plasma membrane

135. Colchicine ($C_{22}H_{25}O_6N$) which prevents spindle formation is chemically a :
(1) Protein (2) Amino acid
(3) Alkaloid (4) Glycolipid

136. During telephase :
(1) Nuclear membrane is formed
(2) Nucleolus appears
(3) Astral rays disappear(4) All the above

137. Chromosomal morphology (Structure) is best observed at :
(1) Prophase (2) Metaphase
(3) Interphase (4) Anaphase

138. Direct or incipient cell div. is :
(1) Cryptomitosis
(2) Dinomitosis
(3) Amitosis
(4) Mitosis and Meisos

139. Bead like thickened portions of leptotene chromosomes are :
(1) Centromeres (2) Chromomeres
(3) Centrioles (4) Chromocentres

140. Which stage of cell cycle is characterised by DNA replication, synthesis of Histone and formation of new nucleosomes :
(1) S-phase (2) G1-pahse
(3) G2-pahse (4) M-pahse

141. In which stage of centromere lie at equator and arms are directed towards poles :
(1) Metaphase of mitosis (2) Metaphase -I
(3) MetaphaseIi (4) 1 and 3 both

142. What type of division lead to coenocytic condition :
(1) Cryptomitosis (2) Endomitosis
(3) Free nulcear div (4) Dino-mitosis

143. In anaphase, a metacentric chromosome appears :
(1) i shaped (2) J - shaped
(3) V-shaped (4) L - shaped

144. Pairing of homologous chromosomes is called :
(1) Disjuction (2) Synapsis
(3) Segregation (4) Polyteny

145. In meiosis-I the inter zonal fibers appear in which stage :
(1) Prophase – I (2) Metaphase - I
(3) Anaphase - I (4) Telophase - I

146. During cytokinesis in plants, which of the following secretes the middle lamella :
(1) Golbibody (2) SER
(3) RER (4) Lysosomes

147. Which cell division is responsible for the growth of tissue and individuals :
(1) Amitosis (2) Mitosis
(3) Meiosis (4)Mitosisand meiosis

148. Preparatio phase of mitosis is :
(1) G1-phase (2) S-phase
(3) Prophase (4) Interphase

149. Equatorial plate (Metaphase plate) found in:
(1) Metaphase (2) Prophase
(3) Telophase (4) Anaphase

150. Synasis found in between :
(1) Nonhomologous chromosome
(2) Homologous chromosome
(3) Nonhomologous and homologous chromosome
(4) Chromatids

151. Synationemal complex first appear :
(1) Leptotene (2) Pachytene
(3) Zygotene (4) Diplotene

152. The correct sequence of prophae-I of meiosis is :
(1)Leptotene, pachtene zygotene, diplotene diakinesis
(2)Leptotene, diplotene, pachytene, zygotene, diakinesis
(3)Leptotene, zygotene, pachytene, diplotene diakinesis
(4)Leptotene, zygotene, diakinesis diplotene

153. V, J and L shaped chromosome occur in
(1) Prophase (2) Anaphase
(3) Metaphase (4) Telophase

154. M-phase of cell cycle consist of :
(1) G1, S and G1 phase
(2) Prophase, Metaphase, Anaphase, Telophase
(3) Intephase, Prophase, Metaphase, Anaphase, Telophase
(4) Only prophase

155. Crossing over takes place in :
(1) Zygotene
(2) Diakinesis
(3) Pachytene or diplotene
(4) Diplotene

156. Number of cells obtained by meiosis :
(1) 2 (2) 4 (3) 6 (4) 8

157. Meiosis results in :
(1) Half number of chromosome
(2) Same number of chromosome
(3) Double number of chromosime
(4) 1/4 number of chromosome

158. Equational division is the term used for :
(1) Amitosis (2) Mitosis
(3) Meiosis-I (4) Meiosis -II

159. Longest phase of mitosis is :
(1) Prophase (2) Metaphase
(3) Anaphase (4) Telephae

160. Two conical half spindles found in :
(1) Prophase (2) Metaphase
(3) Anaphase (4) Telophase

161. When the prophase chromosome are staned with acetocarmine they take differential staining. This phenomenon is called :
(1) Idiogram (2) Karyotype
(3) Heterophycnosis (4) Satellite

162. The nuclear spindle :
(1) Is formed in amitotic division
(2) Is formed in mitotic division
(3) If formed in meiotic division
(4) Is formed in mitotic and meiotic division

163. Nuclear membrane disappears in :
(1) Late prophase (2) Early prophase
(3) Metaphase (4) Telophase

164. Crossing over takes place on :
(1) Two stranded stage
(2) Three straded stage
(3) One straded stage
(4) Four stranded stage

165. Pre - DNA synthesis phase is :
(1) G1 – phase (2) G2 - phase
(3) S-phase (4) Prophase

166. Terminatlization process starts in :
(1) Leptotene (2) Zygotene
(3) Diplotene (4) Diakinesis

167. Which of the following is called heterotypic division :
(1) Meiosis-I (2) Meiosis-II
(3) Mitosis (4) Amitosis

168. DNA replication is found in :
(1) Mitosis and meiosis-I
(2) Mitosis and meiosis-I and meiosis-II
(3) Meiosis only (4) Mitosis only

169. Thick-thread stage occurred in :
(1) Leptotene (2) Zygotene
(3) Pachytene (4) Diplotene

170. Decision of cell division occurs at -
(1) Starting of G1
(2) End of G1
(3) Initial stage of prophase
(4) End of telophase

171. Smallest phase of mitosis is -
(1) Prophase (2) Metaphase
(3) Anaphase (4) Telophase

172. Synthesis of proteins for formation of spindle fibres takes place in -
(1) G1 – phase (2) S-phase
(3) G2 – phase (4) M-phase

173. How many division will occur in an isolated tip cell to form 128 cells.
(1) 128 (2) 127 (3) 32 (4) 7

174. In which stage the Chromosomes combine and begin to separate from each the during meiosis cell division :
(1) Pachytene (2) Dipolotene
(3) Zygotene (4) Diakiness

175. In which stage the DNA is doubled :
(1) Metaphase (2) Anaphase
(3) Interphase (4) Prophase

176. Enzyme essential for DNA Replication is :
(1) DNA Polymerase (2) Urease
(3) Ligase (4) Zymase

177. Which type of cell division heals the wound -
(1) Amitosis (2) Mitotic
(3) Meiosis (4) Free nuclear

178. Number of spore mother cells required to produce 64 spores -
(1) 16 (2) 32 (3) 64 (4) 128

179. Causes of Cancer is -
(1) Fast and uncontrolled cell division by Meiosis
(2) Stop the process which controls cell division in Mitosis
(3) Over growth of daughter cells in telophase and due to failure of cleavage furrow an non separation of cells
(4) Unequal amount of DNA is daughter cells formed by Mitosis.

180. In which stage of meiosis the chromosomes appear thick and short and located near the periphery of nucleus -
(1) Diakinesis (2) Zygotene
(3) Pachytene (4) Diplotene

181. The significance of Meiosis is that it -
(1) Produce four cells having chromosomal number equal to mother cell
(2) Occurs in all types of cells
(3)Maintains the constant Chromosomes number to a particular species
(4) Growth of animal body organs

182. Which statement is true for mitosis -
(1) Daughter cells exhibit division of labour i. e. perform different functions
(2) Daughter cells are exactly similar is all respect
(3)Daughter cells have half the number of chromosomes as compared to mother cell
(4) Daughter cells have differences in genetic characters

183. Cell Cycle of an ordinary animals -
(1) $2n \xrightarrow{\text{Mitosis}} n \xrightarrow{\text{Fertilization}} 2n \xrightarrow{\text{Meiosis}} 2n$
(2) $n \xrightarrow{\text{Meiosis}} 2n \xrightarrow{\text{Fertilization}} 2n \xrightarrow{\text{Mitosis}} n$
(3) $2n \xrightarrow{\text{Meiosis}} n \xrightarrow{\text{Fertilization}} 2n \xrightarrow{\text{Mitosis}} 2n$
(4) $2n \xrightarrow{\text{Fertilization}} (n) \xrightarrow{\text{Mitosis}} 2n \xrightarrow{\text{Meiosis}} n$

184. Mitosis is not found in -
(1) Cartilage cells (2) Bone cells
(3) Nerve cells (4) All of the above

185. The site of meiosis in higher plants -
(1) Growth cells (2) Root tip cell
(3) Stomatal cell (4) Spore mother cells

186. How many types of spindles are forms during cell division in Eukaryotes :
(1) 3 (2) 4 (3) 5 (4) 2

187. Best material for the study of mitosis in laboratory : **[CPMT 2002]**
(1) Anther (2) root tip
(3) leaf tip (4) Ovary

188. Mitosis occurs in : **[RPMT 2002]**
(1) Haploid individuals
(2) Diploid individuals
(3) Both (a) & (b)
(4) In bacteria only

189. The number of DNA in chromosome at G2 state of cell cycle : **[RPMT 2002]**
(1) one (2) two (3) four (4) Eight

190. Which is correct for meiotic metaphase-I **[RPMT 2002]**
(1) Bivalents are arranged at equator
(2) Univalents are arranged at equator
(3) Non-homologus chromosomes forms pair
(4)Spindle fibers are attached at chromomere

191. Which one of the following precedes re-formation of the nuclear envelope during M phase of the cell cycle : **[CBSE 2004]**
(1) Transcription from chromosomes and reassembly of the nuclear lamina
(2) Formation of the contractile ring and formation of the phragmoplast
(3) Formation of the contractile ring and transcription from chromosomes
(4) Decondensation from chromosomes and reassembly of the nuclear lamina

192. Crossing over that result in genetic recombination in higher organisms occurs between - **[CBSE 2004]**
(1) Non-sister chromatics of a bivalent
(2) Two daughter nuclei
(3) Two different bivalents
(4) Sister chromatics of a bivalents

193. In the somatic cell cycle :**[CBSE 2004]**
(1) DNA replication takes place in S-phase
(2) A short interphase is followed by a long mitotic phase
(3) G2 phase follows mitotic phase
(4) In G1 phase DNA content is double the amount of DNA present in the original cell

194. In which stage of meiosis the chromosome number reduces to half : **[RPMT 2004]**
(1) Anaphase-I (2) Anaphase-II
(3) Telophase-I (4) Telophase-II

195. Chiasmata are formed as a result of : **[RPMT 2004]**
(1) Exchange of parts of paried homologus chromosome
(2) Echange of part of unpaired non-homolous chromosome
(3) Duplication of parts of paried homologus chromosome
(4) Loss of parts of unpaired non-mohologous chromosome

196. When synapsis is complete all along the chromosome, the cell is said to have entered a stage called : **[AIIMS 2005]**
(1) Zygotene (2) Pachytene
(3) Diplotene (4) Diakinesis

197. Many cells function properly and divide mitiotically eney through they do not have **[AIIMS 2005]**
(1) Plasma membrane (2) Cytoskeleton
(3) Mitochondria (4) Plastids

198. Centromere is required for – **[CBSE 2005]**
(1) Movement of chromosomes towards poles
(2) Cytoplasmic cleacage
(3) Crossing over (4) Transcription

199. At what stage of the cell cycle are histone proteins synthesized in a eukaryotic cell - **[CBSE 2005]**
(1) During telophase
(2) During S-phase
(3) During G2-stage of prophase
(4) During entire prophase

200. In the n=16 in plant cell then how is possible in metaphase -I of meiosis : **[RPMT 2007]**
(1) 32Bivalents
(2) 16 Telravalents
(3) 16 Bivalents
(4) 32Bivalents

ANSWER KEY — CELL DIVISION

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	**1**	**1**	**2**	**4**	**4**	**3**	**3**	**1**	**2**	**4**	**3**	**4**	**3**	**4**	**1**
Que.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Ans.	**3**	**4**	**2**	**3**	**2**	**2**	**4**	**1**	**2**	**2**	**4**	**2**	**4**	**2**	**1**
Que.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Ans.	**1**	**4**	**3**	**4**	**4**	**4**	**4**	**1**	**3**	**1**	**1**	**1**	**2**	**4**	**1**
Que.	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ans.	**3**	**3**	**3**	**4**	**4**	**4**	**4**	**3**	**2**	**1**	**4**	**2**	**4**	**1**	**4**
Que.	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Ans.	**4**	**3**	**3**	**3**	**1**	**3**	**1**	**3**	**2**	**1**	**3**	**1**	**3**	**1**	**4**
Que.	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
Ans.	**3**	**3**	**4**	**1**	**1**	**2**	**1**	**2**	**3**	**3**	**3**	**4**	**2**	**1**	**2**
Que.	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
Ans.	**1**	**2**	**1**	**4**	**1**	**2**	**3**	**4**	**4**	**2**	**1**	**2**	**3**	**2**	**4**
Que.	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
Ans.	**3**	**1**	**2**	**1**	**2**	**2**	**4**	**1**	**1**	**4**	**2**	**1**	**2**	**2**	**2**
Que.	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135
Ans.	**1**	**1**	**3**	**4**	**1**	**4**	**4**	**1**	**2**	**4**	**3**	**2**	**1**	**1**	**3**
Que.	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150
Ans.	**4**	**2**	**3**	**2**	**1**	**4**	**3**	**3**	**2**	**2**	**1**	**2**	**4**	**1**	**2**
Que.	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165
Ans.	**3**	**3**	**2**	**2**	**3**	**2**	**1**	**4**	**1**	**2**	**3**	**4**	**1**	**4**	**1**
Que.	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
Ans.	**3**	**1**	**1**	**3**	**2**	**3**	**3**	**4**	**2**	**3**	**1**	**2**	**1**	**2**	**1**
Que.	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195
Ans.	**3**	**2**	**3**	**3**	**4**	**1**	**2**	**3**	**2**	**1**	**2**	**1**	**1**	**1**	**1**
Que.	196	197	198	199	200										
Ans.	**2**	**4**	**1**	**2**	**3**										