

- Which of the following is a correct match?
  - Down's syndrome - 21<sup>st</sup> chromosome
  - Sickle cell anaemia- X-chromosome
  - Haemophilia- Y-chromosome
  - Parkinson disease - X and Y-chromosome
- Hydrolytic enzymes which act at low pH are called as
  - proteases
  - $\alpha$ -amylases
  - hydrolases
  - peroxidase
- Acromegaly is caused by
  - excess of STH
  - excess of thyroxine
  - deficiency of thyroxine
  - excess of adrenaline
- Genetic drift operates in
  - small isolated population
  - large isolated population
  - fast reproductive population
  - slow reproductive population
- Mainly which type of hormones control the menstrual cycle in human beings?
  - FSH
  - I.H
  - FSH, LH, Oestrogen
  - Progesterone
- When both ovaries are removed from rat which hormone is decreased in blood
  - oxytocin
  - prolactin
  - Oestrogen
  - gonadotrophic releasing factor
- Which cartilage is present on the end of long bones ?
  - Calcified cartilage
  - Hyaline cartilage
  - Elastic cartilage
  - Fibrous cartilage
- In fluid mosaic model of plasma membrane
  - upper layer is non-polar and hydrophilic
  - polar layer is hydrophobic
  - phospholipids form a bimolecular layer
  - middle part
  - proteins from a middle layer
- According to fossils discovered upto present time, origin and evolution of man was started from which country?
  - France
  - Java
  - Africa
  - China
- Which of the following statement is true for lymph?
  - WBC and serum
  - All components of blood except RBCs and some proteins
  - RBCs, WBCs and Plasma
  - RBCs, Proteins and Platelets
- Impulse of heart beat originates from
  - SA node
  - AV node
  - vagus nerve
  - cardiac nerve
- Continuous bleeding from an injured part of body is due to deficiency of
  - vitamin-A
  - vitamin-B
  - vitamin-K
  - vitamin-E
- Which of the following statement is correct about the node of Ranvier?
  - Axolemm is discontinuous
  - Myelin sheath is discontinuous
  - Both neurilemma and myelin sheath are discontinuous
  - Covered by myelin sheath

14. Number of wild life is continuously decreasing. What is the main reason of this?  
 (a) Predation  
 (b) Cutting down of forests  
 (c) Destruction of habitats  
 (d) Hunting
15. In which era reptiles were dominated?  
 (a) Coenozoic era (h) Meszoic era  
 (c) Palaeozoic era (d) Archazoic era
16. What is true for individual of same species?  
 (a) Live in same niche  
 (b) Live in same habitat  
 (c) Interbreeding  
 (d) Live in different habitats
17. Which of the following is absent in polluted water?  
 (a) *Hydrilla* (b) Water hyacinth  
 (c) Larva of stone fly (d) Blue green algae
18. In Protozoa like *Amoeba* and *Paramecium* an organelle is found for osmoregulation which is  
 (a) contractile vacuole (b) mitochondria  
 (c) nucleus (d) food vacuole
19. During its formation, bread becomes porous due to release of CO<sub>2</sub> by the action of  
 (a) yeast (b) bacteria  
 (c) virus (d) protozoans
20. Which bacteria are utilized in gober gas plant?  
 (a) Methanogens  
 (b) Nitrifying bacteria  
 (c) Ammonifying bacteria  
 (d) Denitrifying bacteria
21. Which of the following is without exception in angiosperms?  
 (a) Presence of vessels  
 (b) Double fertilization  
 (c) Secondary growth  
 (d) Autotrophic nutrition
22. Cancerous cells can easily be destroyed by radiation due to  
 (a) rapid cell division (b) lack of nutrition  
 (c) fast mutation (d) lack of oxygen
23. Which of the following does not secrete toxins during storage conditions of crop plants?  
 (a) *Aspergillus* (b) *Penicillium*  
 (c) *Fusarium* (d) *Colletotrichum*
24. Which of the following plant produces seeds but not flowers?  
 (a) Maize (b) Mint  
 (c) Peepal (d) *Pinus*
25. Best material for the study of mitosis in laboratory is  
 (a) anther (b) root tip  
 (c) leaf tip (d) ovary
26. Mitotic spindle is mainly composed of which proteins?  
 (a) Actin (b) Myosin  
 (c) Actomyosin (d) Myoglobin
27. Which of the following occurs more than one and less than five in a chromosome?  
 (a) Chromalid (b) Chromomcre  
 (c) Cenlromere (d) Telomere
28. Organisms which obtain energy by the oxidation of reduced inorganic compound are called  
 (a) phoioautotrophs (b) chemoautotrophs  
 (c) saprozoic (d) coprohcierotrophs
29. In angiospcrms, all the four microspores of tetrad are covered by a layer which is formed by  
 (a) pectocellulose (b) callose  
 (c) cellulose (d) sporopolienin
30. Which type of association is found in between entomophilous flower and pollinating agent?  
 (a) Mutualism (b) Commensalism  
 (c) Cooperation (d) Co-evolution
31. What is the direction of micropyle in anatropous ovule?  
 (a) Upward (b) Downward  
 (c) Right (d) Left
32. Maximum greenhouse gas is released by which country ?  
 (a) India (b) France  
 (c) USA (d) Britain
33. In angiosperms, pollen tube liberates their male gametes into the  
 (a) central cell (b) antipodal cell  
 (c) egg cell (d) synergids



34. Which of the following absorb light energy for photosynthesis?  
 (a) Chlorophyll (b) Water molecule  
 (c) O<sub>2</sub> (d) Ku BP
35. In photosynthesis energy from light reaction to dark reaction is transferred in the form of  
 (a) ADP (b) ATP  
 (c) RuDP (d) Chlorophyll
36. Opening and closing of stomata is due to  
 (a) hormonal change in guard cells  
 (b) change in turgor pressure of guard cells  
 (c) gaseous exchange (d) respiration
37. Which pigment absorbs the red and far red light?  
 (a) Cytochrome (b) Phytochrome  
 (c) Carotenoids (d) Chlorophyll
38. Seed dormancy is due to the  
 (a) ethylene (b) abscisic acid  
 (c) IAA (d) starch
39. Edible part in mango is  
 (a) mesocarp (b) epicarp  
 (c) endocarp (d) epidermis
40. What is true for cleavage?  
 (a) Size of embryo increases  
 (b) Size of cells decreases  
 (c) Size of cells increases  
 (d) Size of embryo decreases
41. Geocarpic fruit is  
 (a) potato (b) peanut  
 (c) onion (d) garlic
42. In which animal nerve cell is present but brain is absent?  
 (a) Sponge (b) Earthworm  
 (c) Cockroach (d) *Hydra*
43. In bacteria, plasmid is  
 (a) circular chromosomal material  
 (b) main DNA  
 (c) non-functional DNA (d) repetitive gene
44. Two different species cannot live for long duration in the same niche or habitat. This law is  
 (a) Alien's law (b) Mendel's law
- (c) Cause's competitive exclusion principle  
 (d) Weismann's theory
45. A gene is said to be dominant if  
 (a) it expresses its effect only in homozygous state  
 (b) it expresses only in heterozygous condition  
 (c) it expresses in both homozygous and heterozygous conditions  
 (d) it is never expressed in any condition
46. Pleiotropic gene is,  
 (a) haemophilia (b) thalassaemia  
 (c) sickle cell anaemia (d) colourblindness
47. Four radial vascular bundles are found in  
 (a) dicot root (b) monocot root  
 (c) dicot stem (d) monocot stem
48. Vessels are found in  
 (a) all angiosperms and some gymnosperms  
 (b) most of the angiosperms and few gymnosperms  
 (c) all angiosperms, all gymnosperms and some pteridophytes  
 (d) all pteridophytes
49. Jacob and Monod studied lactose metabolism in *E. coli* and proposed operon concept. Operon concept applicable for  
 (a) all prokaryotes  
 (b) all prokaryotes and some eukaryotes  
 (c) all prokaryotes and all eukaryotes  
 (d) all prokaryotes and some protozoans
50. A diseased man marries a normal woman and they get three daughters and five sons. All the daughters were diseased and sons were normal. The gene of this disease is  
 (a) sex-linked dominant  
 (b) sex-linked recessive  
 (c) sex-limited character  
 (d) autosomal dominant
51. In a DNA percentage of thymine is 20. What is the percentage of guanine?  
 (a) 20% (b) 40%  
 (c) 30% (d) 60%
52. Which of the following is the example of sex-linked disease?  
 (a) AIDS (b) Colourblindness

- (c) Syphilis (d) Gonorrhoea
53. Which statements are correct for bacterial transduction?  
 (a) Transfer of some genes from one bacteria to another bacteria through virus  
 (b) Transfer of genes from one bacteria to another bacteria by conjugation  
 (c) Bacteria obtained its DNA directly  
 (d) Bacteria obtained DNA from other external source
54. Transformation experiment was first performed on which bacteria?  
 (a) *E. coli*  
 (b) *Diplococcus pneumoniae*  
 (c) *Salmonella*  
 (d) *Pasteurella pestis*
55. A plant of F<sub>1</sub> generation has genotype "AABbCC". On selfing of this plant, the phenotypic ratio in F<sub>2</sub> generation will be  
 (a) 3 : 1 (b) 1: 1  
 (c) 9 3:3:1 (d) 27: 9:9 :9: 3: 3:3:1
56. Axillary bud and terminal bud are derived from the activity of  
 (a) lateral meristem  
 (b) intercalary meristem  
 (c) apical meristem (d) parenchyma
57. Which of the following crops have been brought to India from New world?  
 (a) Cashewnut, potato, rubber  
 (b) Mango, tea  
 (c) Tea, rubber mango (d) Coffee
58. Which of the following enzymes are used to join bits of DNA ?  
 (a) Ligase (b) Primase  
 (c) DNA polymerase (d) Endonuclease
59. Which of the following statement is true?  
 (a) Vessels are multicellular and with wide lumen  
 (b) Tracheids are multicellular and with narrow lumen  
 (c) Vessels are unicellular and with narrow lumen  
 (d) Tracheids are unicellular and with wide lumen
60. Which of the following reunites the exon segments after RNA splicing?  
 (a) RNA polymerase (b) RNA primase  
 (c) RNA ligase (d) RNA proiase
61. There are three genes a, b, c, percentage of crossing over between a and b is 20%. b and c is 28% and a and c is 8%. What is the sequence of genes on chromosome?  
 (a) b, a, c (b) a, b, c  
 (c) a, c, b (d) none of these
62. Manipulation of DNA in generic engineering became possible due to the discovery of  
 (a) restriction endonuclease  
 (b) DNA ligase  
 (c) transcriptase  
 (d) primase
63. Convergent evolution is illustrated by  
 (a) starfish and cuttle fish  
 (b) dogfish and whale  
 (c) rat and dog  
 (d) bacterium and protozoan
64. Which one of the following is a matching pair of an animal and a certain phenomenon it exhibits?  
 (a) *Chameleon* - Mimicry  
 (b) *Taenia* - Polymorphism  
 (c) *Pheretima* - Sexual dimorphism  
 (d) *Musca* - Complete metamorphosis
65. Random genetic drift in a population probably result from  
 (a) constant low mutation rate  
 (b) large population size  
 (c) highly genetically variable individuals  
 (d) interbreeding within this population
66. During prolonged fasting, in what sequence are the following organic compounds used up by the body ?  
 (a) First carbohydrates, next proteins and lastly lipids  
 (b) First proteins, next lipids and lastly carbohydrate  
 (c) First carbohydrate, next fats and lastly proteins  
 (d) First fats, next carbohydrates and lastly proteins



67. The apical meristem of the root is present  
 (a) only in adventitious roots  
 (b) in all the roots  
 (c) only in radicals (d) only in tap roots
68. Diffuse porous woods are characteristic of ptam growing in  
 (a) temperate climate (b) tropics  
 (c) alpine region  
 (d) cold winter regions
69. Which one of the following is wrong in relation to photorespiration?  
 (a) It is a characteristics of  $C_4$  plants  
 (b) li is a characteristics of  $C_3$  plants  
 (c) It occurs in chloroplasts  
 (d) It occurs in daytime only
70. Stomata of CAM plants  
 (a) open during the night and close during the day  
 (b) never open  
 (c) are always open  
 (d) open during the day and close at night
71. The major portion of the dry weight of plants comprises of  
 (a) carbon, nitrogen and hydrogen  
 (b) carbon, hydrogen and oxygen  
 (c) nitrogen, phosphorus and potassium  
 (d) calcium, magnesium and sulphur
72. In *Drosophila*, the sex is determined by  
 (a) the ratio of pairs of X-chromosomes to the pairs of amosomes  
 (b) whether the egg is fertilized or develops parthenogeneically  
 (c) the ratio of number of X-chromosomes to the set of autosomes  
 (d) X and Y-chromosomes
73. Christmas disease is another name for  
 (a) Down's syndrome (b) sleeping sickness  
 (c) haemophilia-B (d) hepatits-B
74. When a cluster of genes show linkage behaviour they  
 (a) do not show independent assortment  
 (b) induce cell division  
 (c) do not show a chromosome map  
 (d) show recombination during meiosis
75. Degeneration of a genetic code is attributed to the  
 (a) entire codon  
 (b) third member of a codon  
 (c) first member of a codon  
 (d) second member of a codon
76. In a flowering plant, archesporium gives rise to  
 (a) wall and the tapetum  
 (b) only tapetum and sporogenous cells  
 (c) only the wall of the sporangium  
 (d) both wall and the sporogenous cells
77. Which one of the following mineral elements plays an important role in biological nitrogen fixation?  
 (a) Zinc (b) Molybdenum  
 (c) Copper (d) Manganese
78. In sugarcane plant  $^{14}CO_2$  is fixed in a malic acid, in which the enzyme that fixes  $CO_2$  is  
 (a) ribulose phosphate kinase  
 (b) fructose phosphatase  
 (c) ribulose biphosphate carboxylase  
 (d) phosphoenol pyruvic acid carboxylase
79. Which one of the following is categorized under living fossils?  
 (a) *Selaginella* (b) *Metasequoia*  
 (c) Pmus (d) Cyccu
80. Boron in green plants assists in  
 (a) photosynthesis (b) sugar transport  
 (c) activation of enzymes  
 (d) acting as enzyme cofactor
81. Chlorenchyma is known to develop in the  
 (a) spore capsule of a moss  
 (b) pollen tube of *Pinus*  
 (c) cytoplasm of *Chlorella*  
 (d) mycelium of a green mould such as *Aspergillus*
82. The aleurone layer in maize grain is specially rich in  
 (a) lipids (b) auxins  
 (c) proteins (d) starch
83. Given below are four matchings of an animal and its kind of respiratory organ  
 (a) silver fish - trachea  
 (b) scorpion - book lung

(c) sea squirt - pharyngeal gills

(d) dolphin - skin

The correct matchings are

(a) B and D

(b) C and D

(c) A and D

(d) A, B and C

84. Which of the following discoveries resulted in a Nobel Prize?  
(a) Recombination of linked genes  
(b) Genetic engineering  
(c) X-rays induce sex-linked recessive lethal mutations  
(d) Cytoplasmic inheritance
85. In which kingdom would you classify the Archaea and nitrogen-fixing organisms. If the five-kingdom system of classification is used  
(a) Protista (b) Monera  
(c) Plantae (d) Fungi
86. Which one of the following traits of garden pea studied by Mendel was a recessive feature?  
(a) Green pod colour (b) Round seed shape  
(c) Axial flower position (d) Green seed colour
87. Juicy hair-like structures observed in the lemon fruit develop from  
(a) endocarp (b) both (a) and (d)  
(c) exocarp (d) mesocarp
88. Which one of the following describes correctly the homologous structures?  
(a) Organs that have no function now, but had an important function in ancestors  
(b) Organs appearing only in embryonic stage and disappearing later in the adult  
(c) Organs with anatomical similarities, but performing different functions  
(d) Organs with anatomical dissimilarities, but performing same functions
89. Darwin in his 'Natural Selection Theory', did not believe in any role of which one of the following in organic evolution?  
(a) Struggle for existence  
(b) Discontinuous variations  
(c) Parasites and predators as natural enemies  
(d) Survival of the fittest
90. *Escherichia coli* is used as an indicator organism to determine pollution of water with  
(a) industrial effluents

(b) pollen of aquatic plants

(c) heavy metals

(d) faecal matter

91. Which one of the following pairs is not correctly matched?  
(a) Vitamin B<sub>12</sub> - Pernicious anaemia  
(b) Vitamin B<sub>1</sub> - Beri-beri  
(c) Vitamin C - Scurvy  
(d) Vitamin B<sub>2</sub> - Pellagra
92. Which elements are located at the centre of the porphyrin ring in chlorophyll?  
(a) Potassium (b) Manganese  
(c) Calcium (d) Magnesium
93. In the genetic code dictionary, how many codons are used to code for all the 20 essential amino acids?  
(a) 61 (b) 60  
(c) 20 (d) 64
94. Systemic heart refers to  
(a) entire heart in lower vertebrates  
(b) the two ventricles together in humans  
(c) the heart that contracts under stimulation from nervous system  
(d) left auricle and left ventricle in higher vertebrates
95. In which one of the following options the two names refer to one and the same thing?  
(a) Citric acid cycle and Calvin cycle  
(b) Tricarboxylic acid cycle and urea cycle  
(c) Krebs' cycle and Calvin cycle  
(d) Tricarboxylic acid cycle and citric acid cycle
96. Test tube baby means a baby born when  
(a) the ovum is fertilized externally and thereafter implanted in the uterus  
(b) it develops from a non-fertilized egg  
(c) it is developed in a test tube  
(d) it is developed through tissue culture method
97. During embryonic development, the establishment of polarity along anterior/posterior, dorsal/ventral or medial/lateral axis is called  
(a) anamorphosis (b) pattern formation  
(c) organizer phenomena (d) axis formation

**98.** Two crosses between the same pair of genotypes or phenotypes in which the sources of the gametes are reversed in one cross, is known as

- (a) dihybrid cross                      (b) reverse cross  
(c) test cross                              (d) reciprocal cross

**99.** Pattern baldness, moustaches and beard in human males are examples of

- (a) sex differentiating traits  
(b) sex determining traits  
(c) sex linked traits  
(d) sex limited traits

**100.** Plants reproducing by spores such as mosses and ferns are grouped under the general term

- (a) sporophytes                              (b) thallophytes  
(c) cryptogams                              (d) bryophytes

## Answer – Key

1. a	2. c	3. a	4. a	5. c	6. c	7. b	8. c	9. c	10. b
11. a	12. c	13. b	14. c	15. b	16. c	17. c	18. a	19. a	20. a
21. b	22. a	23. d	24. d	25. b	26. a	27. d	28. b	29. b	30. a
31. b	32. c	33. d	34. a	35. b	36. b	37. b	38. b	39. a	40. b
41. b	42. d	43. a	44. c	45. c	46. c	47. a	48. b	49. a	50. a
51. c	52. b	53. a	54. b	55. a	56. c	57. a	58. a	59. a	60. c
61. a	62. a	63. b	64. d	65. c	66. c	67. b	68. b	69. a	70. a
71. b	72. c	73. c	74. a	75. b	76. d	77. b	78. d	79. d	80. b
81. a	82. c	83. d	84. c	85. b	86. d	87. a	88. c	89. b	90. d
91. d	92. d	93. a	94. a	95. d	96. a	97. d	98. d	99. d	100. c