

BIOLOGY

1. On naming a plasmid in genetic engineering, the first letter stands for the
(A) Scientist (B) Plasmid
(C) Researcher (D) Designation of the Plasmid
2. Seed bud is
(A) embryo (B) endosperm
(C) ovule (D) stigma
3. Genetic maps of chromosomes are based on the frequency of
(A) Non-disjunction (B) Translocation
(C) Dominance (D) Genetic recombination
4. A pathogen of several dicot plant that transforms normal plant cell into a tumor is
(A) *Escherichia coli* (B) *Meloidogyne incognita*
(C) *Agrobacterium tumefaciens* (D) *Bacillus thuringiensis*
5. The major immunoglobulin present in the colostrum is
(A) IgA (B) IgG
(C) IgD (D) IgE
6. In a National Park, protection is provided to
(A) Entire ecosystem (B) Flora and fauna
(C) Fauna only (D) Flora only
7. In man, the vas deferens emerges from
(A) cauda epididymis (B) caput epididymis
(C) corpora epididymis (D) glomus major

8. Which organelle form middle piece of sperm during sperm maturation ?
- (A) Ribosomes (B) Mitochondria
(C) Plastids (D) Endoplasmic Reticulum
9. Excretion in Arthropoda is done by
- (A) Flame cells (B) Nephridia
(C) Green glands (D) Kidney
10. Gir is
- (A) a milch breed (B) a drought breed
(C) both (A) and (B) (D) neither (A) and (B)
11. The first hormone discovered was
- (A) Auxins (B) Gibberellins
(C) Cytokinins (D) Ethylene
12. Which one of the following correctly matches a sexually transmitted disease(STD) with its pathogen ?
- (A) AIDS - *Bacillus anthracis*
(B) Urethritis - *Plasmodium vivax*
(C) Syphilis - *Treponema pallidum*
(D) Gonorrhoea - *Leishmania donovani*
13. Five Kingdom Classification of living organisms was proposed by
- (A) Robert Whittaker (B) Ernst Haeckel
(C) Carolus Linnaeus (D) Jonathan Hutchinson
14. Sometimes the immune system of the body starts behaving against the 'own body' or 'self'. This leads to
- (A) Bacterial diseases (B) Autoimmune diseases
(C) Viral diseases (D) Hereditary diseases

15. In prokaryotes, ribosomes has two sub-units which are
- (A) 30S & 50S (B) 20S & 50S
(C) 30S & 40S (D) 60S & 40S
16. The secondary immune response is due to
- (A) memory cells (B) clone cells
(C) T-cells (D) B-cells
17. The product present in protein enriched milk produced by Rosie, the first transgenic cow is
- (A) α -lactalbumin (B) α -1-antitrypsin
(C) β galactosidase (D) N-acetyl glucosamine
18. Which polysaccharide gives blue colour with iodine ?
- (A) Cellulose (B) Starch
(C) Glycogen (D) Chitin
19. IVF or test tube babies technique involves
- (A) fertilisation outside the female body
(B) development of foetus in the test tube
(C) both (A) and (B)
(D) none of the above
20. Huge quantity of sewage is dumped into a river. The BOD will
- (A) Increase (B) Decrease
(C) Slightly decrease (D) Remain unchanged

21. In protoplast fusion, the enzymes required are
- (A) ligase, hemicellulase (B) amylase, cellulase
(C) pectinase, cellulase (D) pectinase, ligase
22. Oxygenated blood enters the atrium through
- (A) Pulmonary vein (B) Pulmonary artery
(C) Aorta (D) Superior venacava
23. In the aeration tanks, the sewage is mixed with
- (A) biogas (B) aerobic bacteria
(C) sedimenter (D) anaerobic bacteria
24. The intermediate of Kreb's cycle used for the synthesis of chlorophyll is
- (A) Succinyl Co A (B) OAA
(C) Fumaric acid (D) Malic acid
25. Sickle cell anaemia is due to
- (A) Sex linked inheritance (B) Autosomal recessive disease
(C) Infectious disease (D) Deficiency disease
26. Vaccine for rabies was first produced by
- (A) Robert Koch (B) SL Miller
(C) Edward Jenner (D) Louis Pasteur
27. Weather represents
- (A) Short term properties of atmosphere
(B) Seasonal changes in atmosphere
(C) Average variations of atmospheric conditions
(D) All of the above

28. The covering of the lung is called
- (A) Pericardial membrane/Pericardium (B) Peritoneum
(C) Perichondrium (D) Pleural membrane/Pleura
29. Pearl producing oyster belongs to phylum
- (A) Echinodermata (B) Mollusca
(C) Arthropoda (D) Annelida
30. Coitus interruptus method of birth control involves
- (A) barrier method
(B) vas deferens
(C) lactational amenorrhea
(D) withdrawal of penis just before male ejaculates
31. Trypsinogen is converted into active form by
- (A) Secretin (B) Cholecystokinin
(C) Enterokinase (D) HCl
32. Primordial Soup is the name of
- (A) Rainy season ponds (B) Hot solute rich early sea
(C) Hot molten surface of early earth (D) Lava rich part of early earth
33. What is Total Lung capacity ?
- (A) Tidal volume plus Expiratory reserve volume
(B) Expiratory reserve volume plus Residual volume
(C) Vital capacity plus Residual volume
(D) Tidal volume plus Inspiratory reserve volume

34. Largest Angiosperm is
- (A) *Mangifera indica* (B) *Sequoia sempervirens*
(C) *Genlisea margareta* (D) *Ficus bengalensis*
35. Human heart is
- (A) Neurogenic (B) Myogenic
(C) Both Neurogenic and Myogenic (D) Chemosynthetic
36. Aquatic fern which is an excellent biofertiliser is
- (A) *Marselia* (B) *Salvinia*
(C) *Pteridium* (D) *Azolla*
37. Basmati rice is an example of
- (A) Biowar (B) Cloning
(C) GMO (D) Biopiracy
38. More ADH (Vassopressin) means
- (A) Dilute urine (B) Diuresis
(C) Concentrated urine (D) Hypotonic urine
39. The net product of cyclic photophosphorylation is
- (A) ATP (B) ATP & NADPH₂
(C) ATP & O₂ (D) ATP, NADPH₂ & O₂
40. Lactose operon produces enzymes
- (A) β-galactosidase, permease and glycogen synthetase
(B) β-galactosidase, glycogen synthetase and transacetylase
(C) β-galactosidase, galactose permease and thiogalactoside transacetylase
(D) β-galactosidase, permease and phosphoglucose isomerase

41. If DDT is sprayed in a lake, its highest concentration will be found in
- (A) Phytoplanktons (B) Zooplanktons
(C) Fish eating birds (D) Fishes
42. A technique for producing temporary holes in the plasma membrane to facilitate entry of foreign DNA is
- (A) Microinjection (B) Bollistic method
(C) Electroporation (D) Gene Particle Gun
43. In *Bryophyllum*, the vegetative propagation is by
- (A) roots (B) branch
(C) stem (D) leaves
44. Who developed PCR (Polymerase Chain Reaction) and won the Nobel prize ?
- (A) Herbert Boyer (B) Kary Mullis
(C) Robert Briggs (D) Thomas King
45. During the propagation of nerve impulse , the action potential results from the movement of
- (A) K^+ ions from extracellular fluid to intracellular fluid
(B) Na^+ ions from extracellular fluid to intracellular fluid
(C) Na^+ ions from intracellular fluid to extracellular fluid
(D) K^+ ions from intracellular fluid to extracellular fluid
46. A novel strategy to make plant resistant to nematode is
- (A) RNA synthesis (B) RNA translation
(C) RNA interference (D) DNA replication

47. The genes which on activation produce malignant neoplasm are
- (A) pleiotropic genes (B) oncogenes
(C) multiple genes (D) neonatal genes
48. Bioweapon consist of
- (A) A container carrying the agent + A suitable delivery system + A bioweapon agent
(B) A Bioweapon agent + Bioreactor + A container carrying the agent
(C) A container carrying the agent + A suitable delivery system + Bioreactor
(D) Bioreactor + A container carrying the agent + Enzymes
49. Diagnostic method based on the principle of antigen antibody reaction is
- (A) Gel Electrophoresis (B) PCR
(C) DNA fingerprinting (D) ELISA
50. At the time of entering embryo sac, the pollen tube contains
- (A) one male gamete (B) two male gametes
(C) three male gametes (D) four male gametes
51. The back cross is
- (A) A cross between F_1 individual and F_2 individual
(B) A cross between F_1 individual with another F_1 individual
(C) A cross between F_2 individual and one of the parents
(D) A cross between F_1 individual and one of the two parents
52. Which organisms changed earth's atmosphere from reducing to oxidizing ?
- (A) Chemoautotrophs (B) Chemoheterotrophs
(C) Photoautotrophs (D) Heterotrophs

53. The antibiotic penicillin is produced from a
- (A) fungi (B) bacteria
(C) lichen (D) algae
54. Methionine carrying tRNA has an anticodon
- (A) AUG (B) UAG
(C) UAC (D) UAA
55. Termination of polypeptide chain is brought about by
- (A) UUG, UAG and UCG (B) UAA, UAG and UGA
(C) UUG, UGC and UCA (D) UCG, GCG and ACC
56. The hormone produced by pineal gland, which is involved in Circadian Rhythm (Biological Clock) is
- (A) Oxytocin (B) Melatonin
(C) Mineralocorticoids (D) Parathormone
57. In DNA fingerprinting, analysis is made by
- (A) Satellite DNA
(B) Moderately repetitive sequences
(C) Micro satellites
(D) Variable number of tandem repeats
58. Closing of stomata is caused by
- (A) Increased CO₂ concentration inside the leaf
(B) Increased CO₂ concentration outside the leaf
(C) Decreased CO₂ concentration inside the leaf
(D) Decreased CO₂ concentration outside the leaf

59. Biodiversity is determined by
- (A) Number of individuals in an area (B) Species richness
(C) Evenness (D) Both (B) and (C)
60. A flower on a dioecious plant would be
- (A) asexual (B) bisexual
(C) unisexual (D) none of these
61. The dental formula of human baby is
- (A) 2123/2123 (B) 2102/2102
(C) 2132/2132 (D) 2120/2120
62. Sexually reproducing organisms contribute in their offspring
- (A) All of the genes (B) One half of their genes
(C) One fourth of their genes (D) Double the number of genes
63. What did Miller obtain from his experiment simulating conditions of early earth ?
- (A) Amino acids (B) Organic acids
(C) Peptides (D) All of these
64. The brain size of modern man is
- (A) 400 c.c. (B) 520 c.c.
(C) 1200-1600 c.c. (D) 1800 c.c.
65. The innermost layer of cortex is
- (A) Pericycle (B) Hypodermis
(C) Endodermis (D) Pith

66. Enzymes increase the speed of reaction because
- (A) they are proteinaceous in nature (B) they are substrate specific
- (C) they lower the activation energy (D) they are sensitive to pH
67. In ecology, N/S represents
- (A) Population density (B) Rate of growth
- (C) Change in population size (D) Rate of births
68. Lichens are symbiotic association of
- (A) Fungi and Bryophytes (B) Fungi and Algae
- (C) Algae and Bacteria (D) Fungi and Pteridophytes
69. Flow of energy declines as it passes from lower to higher tropic level. This is explained by
- (A) First law of thermodynamics
- (B) Second law of thermodynamics
- (C) Newton's second law
- (D) Newton's third law
70. ABO blood grouping in humans is an example of
- (A) Polygenic inheritance (B) Multi factor inheritance
- (C) Pleiotropic gene (D) Multiple allele
71. Withdrawal of which of the following hormones is the immediate cause of menstruation ?
- (A) FSH (B) FSH-RH
- (C) Estrogen (D) Progesterone

72. Climax community is
- (A) First stable community
 - (B) Unstable
 - (C) Unstable that develops in the beginning of succession
 - (D) The last stable community
73. Ranikhet disease is caused by
- (A) Parasites
 - (B) Bacteria
 - (C) Virus
 - (D) Fungus
74. Photochemical smog is produced due to
- (A) Air and metal dust
 - (B) Hydrocarbons
 - (C) Nitrogen oxides and hydrocarbons
 - (D) Solar radiations upon nitrogen oxides and hydrocarbons
75. Delayed ripening is a characteristic of
- (A) Bt cotton
 - (B) Flavr Savr
 - (C) Golden Rice
 - (D) *Spirulina*
76. In papilionaceous flower, which one of the following aestivation is present ?
- (A) Vexillary
 - (B) Imbricate
 - (C) Twisted
 - (D) Valvate
77. Which of the following is not associated with the theory of Charles Darwin ?
- (A) Survival of the fittest
 - (B) Struggle for existence
 - (C) Natural selection
 - (D) Inheritance of acquired character

78. The only living component of xylem is
- (A) Tracheids (B) Xylem parenchyma
(C) Vessels (D) Xylem fibres
79. Denitrification is the process of conversion of
- (A) nitrogen to ammonia (B) ammonia to nitrite
(C) nitrites to nitrates (D) nitrates to nitrogen
80. The epithelium present in the lining of pharynx and oesophagus is
- (A) Columnar epithelium (B) Cuboidal epithelium
(C) Keratinised epithelium (D) Non-keratinised epithelium
81. During vigorous exercise, muscle fatigue happens due to the accumulation of
- (A) Pyruvic acid (B) Lactic acid
(C) Ethanol (D) CO₂
82. Which organelle can digest a part of its own cell ?
- (A) Endoplasmic Reticulum (B) Golgi apparatus
(C) Vacuoles (D) Lysosomes
83. Cleavage differs from normal mitosis in that it
- (A) occurs in zygote and is rapid
(B) occurs in all body cells and is slow
(C) occurs only in invertebrates
(D) is slow and consumption of oxygen is less

84. At which of the following stages the implantation in uterus takes place ?
- (A) 8-cell stage (B) Morula
(C) Blastocyst (D) Late gastrula
85. In drunken person, the part of brain to be affected first is
- (A) cerebellum (B) cerebrum
(C) pons vorolli (D) medulla oblongata
86. The most abundant protein in the animal world is
- (A) Collagen (B) Rubisco
(C) Trypsin (D) Insulin
87. Components of the environment are
- (A) Biotic (B) Abiotic
(C) Resource and regulatory factors (D) All of these
88. The phase in the cell where DNA is duplicated is
- (A) Interphase (B) Mitotic phase
(C) Cytokinesis (D) All of these
89. Stages in proper sequence of prophase-I are
- (A) Pachytene, Leptotene, Diplotene, Diakinesis, Zygotene
(B) Leptotene, Zygotene, Pachytene, Diplotene, Diakinesis
(C) Leptotene, Zygotene, Diplotene, Pachytene, Diakinesis
(D) Diplotene, Diakinesis, Leptotene, Zygotene, Pachytene

90. How many cells will be produced if a cell divides mitotically 5 times ?
- (A) 12 (B) 24
(C) 32 (D) 64
91. The process used for removing salts from saline water is
- (A) Diffusion (B) Osmosis
(C) Reverse Osmosis (D) Plasmolysis
92. Semi-conservative DNA replication using N^{15} was demonstrated by
- (A) Meselson (B) Taylor
(C) Meselson and Stahl (D) Hershey and Chase
93. A micronutrient is considered to be toxic when its concentration in tissues reduces the dry weight of tissues by
- (A) 5 % (B) 10 %
(C) 15 % (D) 20 %
94. Which one of the following initiates blood clotting mechanism ?
- (A) Erythrocytes (B) Thrombocytes
(C) Leucocytes (D) Plasma
95. The first carbohydrate formed in photosynthesis is
- (A) PGA (B) OAA
(C) PGAL (D) RuBP
96. The total number of bones in a human skull is
- (A) 29 (B) 26
(C) 206 (D) 209

97. When the centromere of a chromosome is near the extreme end, the chromosome is said to be
- (A) Telocentric (B) Metacentric
(C) Acrocentric (D) Sub-metacentric
98. The major component of gobar gas is
- (A) ammonia (B) ethane
(C) butane (D) methane
99. Government of India legalised MTP (Medical Termination of Pregnancy) in
- (A) 1971 (B) 1981
(C) 1986 (D) 1998
100. What is true of vernalisation ?
- (A) Exposure at low temperature (B) Perceived by shoot apex
(C) Initiate flowering (D) All of these
-