

1. Keserpine is obtained from:
(a) Asafoetida
(b) *Rauwolfia serpentina*
(c) *Curcuma longa*
(d) *Papaver somniferum*
2. The coiling of tendril around some base in response to touch is called :
(a) hydrotaxis (b) chemotaxis
(c) thigmotropism (d) geotaxis
3. Sperm enters from which part of egg :
(a) anywhere in unfertilized egg from animal pole
(b) from animal pole in unfertilized egg
(c) in unfertilized egg from vegetal pole
(d) none of these above
4. Seed coat is derived from :
(a) pericarp (b) epicarp
(c) integuments of ovule (d) nucellus
5. 6 molecules glucose + 6 molecules of O_2 and 8 ADP combined to form $6H_2O$, $6CO_2$ and:
(a) 38 molecules of ATP (b) 28 ATP
(c) 38 ADP (d) 28 ADP
6. A characteristic feature of ovary of *Brassica campestris* is:
(a) presence of replum (b) axile placentation
(c) epigynous (d) multilocular nature
7. One of the characteristic of *Hydra* is:
(a) predation (b) metamerism
(c) hibernation (d) mimicry
8. Where does exocytocytic cycle take place in life cycle of *Plasmodium*?
(a) RBC of human
(b) Human liver
(c) Stomach of *Anopheles* mosquito
(d) Salivary gland of *Anopheles* mosquito
9. Primary acceptor of CO_2 in photosynthesis is:
(a) phosphoric acid
(b) ribulose phosphate
(c) glucose
(d) ribulose 1,5 biphosphate
10. If *Hydra* is cut transversly in three equal parts then:
(a) all three parts will die
(b) regeneration will occur in all the three parts
(c) regeneration will occur only in anterior
(d) regeneration occurs only in middle part
11. Which of the following pair lack the unit membrane?
(a) Nucleus and ER
(b) Mitochondria and chloroplast
(c) Ribosome and nucleolus
(d) Golgi body and lysosome
12. Which of the following statement is correct?
(a) In *Cycas*, megasporophyll produce pollen grains
(b) In *Agaricus* gills produce basidiospores
(c) In *Aspergillus*, fruiting body is perithecium
(d) In *Funaria*, capsule represents gametophytic generation
13. The number of DNA in chromosome at G_2 stage:
(a) one (b) two
(c) four (d) eight

14. How many egg are found in egg chamber of female Cockroach?
 (a) 2 (b) 4
 (c) 8 (d) 16
15. Which of the following is a disaccharide?
 (a) Glucose (b) Fructose
 (c) Sucrose (d) Galactose
16. If all the peptide bonds of protein are broken, then the remaining part is :
 (a) amide (b) oligosaccharide
 (c) polypeptide (d) amino acid
17. *Periplaneta* has no respiratory pigment in its blood because:
 (a) air is conducted directly to the body tissues
 (b) it has haemocoelom
 (c) it has anaerobic respiration
 (d) it lacks blood cell in blood
18. Which is correct for meiotic metaphase I ?
 (a) Bivalents arc arranged at equator
 (b) Univalents arc arranged at equator
 (c) Non-homologous chromosomes forms pair
 (d) Spindle fibres are attached at chromomere
19. Hydrolysis of lipid yields:
 (a) fats
 (b) fatty acids and glycerol
 (c) mannose and glyccrol
 (d) maltose and fatty acid
20. Ctenophora shows affinities with:
 (a) Cnidaria (b) Aschelminthes
 (c) Cephalopoda (d) Turbellaria
21. In the following how the sap wood is converted into heart wood?
 (a) By degeneration of protoplast of living cells
 (b) Tylosis formation
 (c) By deposition of resins, oil, gums etc
 (d) All of these
22. In which of the following animal cleavage divisions arc restricted to a small part of cytoplasm and nucleus in animal pole of egg?
 (a) Cockroach (b) Frog
 (c) Chick (d) Rabbit
23. Exception of Mendel's law is :
 (a) independent assortment (b) linkage
 (c) purity of gametes (d) none of these
24. What type of gametes will form by genotype Rr Yy?
 (a) RY, Ry, rY, ry (b) RY, Ry, ry, ry
 (c) Ry, Ry, Yy, ry (d) Rr, RR, Yy, YY
25. The position of protoxylem in leaf is :
 (a) adaxial
 (b) abaxial
 (c) surrounded by metaxylem
 (d) lateral
26. In *Pheretinia*, locomotion occurs with the help of:
 (a) circular muscles
 (b) longitudinal muscles and setae
 (c) circular, longitudinal muscles and setae
 (d) parapodia
27. The difference in phloem of gymnosperms and angiosperms is due to :
 (a) parenchyma (b) sieve cell
 (c) companion cell (d) fibres
28. A type of life cycle in which plasmogamy, karyogamy, haplodization takes place but not at specific place in life cycle of an organism is called as :
 (a) parasexuality (b) heterozygosity
 (c) homozygosity (d) asexuality
29. In *Amorbn* which controls the cytoplasmic osmality :
 (a) nucleus (b) ectoplasm
 (c) biurets (d) contractile vacuole
30. Branched, aseptate, coenocytic mycelium present in :
 (a) *Aspergillus* (b) *Albugo*
 (c) *Penicillium* (d) *Erysiphe*
31. In which of the following aestivation sepal's/ petal's one margin covers the other and its margin is covered by previous one?
 (a) valvate (b) twisted
 (c) imbricate (d) quincuncial
32. In Cockroach vision is due to:
 (a) one compound eye
 (b) only two compound eyes

- (c) two simple eyes
(d) two compound and two simple eyes
33. The economically important plant of Malvaceae:
(a) *Gossypium hirsutum*
(b) *Hibiscus cannabiss*
(c) *Abelmoschus esculentum*
(d) all of the above
34. When tall and dwarf plants are crossed, from which cross 1:1 ratio is obtained?
(a) Tt and tt (b) tt and tt
(c) Tt x Tt (d) TT and Tt
35. The cells without nuclei are present in :
(a) vascular cambium
(b) root hair
(c) companion cell
(d) members of sieve tube
36. Which of the following is not correctly matched?
(a) Rhinencephalon-olfactory
(b) Hypothalamus-pituitary
(c) Cerebellum-balance
(d) Medulla oblongata-temperature regulation
37. Pyruvic acid is the end product of which process?
(a) Krebs cycle
(b) Calvin cycle
(c) Pentose phosphate pathway
(d) Glycolysis
38. The nutritive layer of microsporangia of
(a) endothecium (b) exothecium
(c) sporogenous tissue (d) tapetum
39. The scientist who was awarded Nobel prize in 1959 for in *vitro* synthesis of polyribonucleotide:
(a) Komberg (b) Calvin
(c) Khurana (d) Ochoa
40. Which of the following have sunken stomata?
(a) *Nerium* (b) *Manyfera*
(c) *Hydrilla* (d) *Zea mays*
41. Heterocercal tail is found in :
(a) Cartilaginous fishes (b) Bony fishes
(c) Whale (d) Amphibians
42. When a plasmolysis cells is placed in a hypotonic solution then water will move inside the cell. Which force causes this?
(a) DPD (b) OF
(c) WP (d) None of these
43. Dormancy of seed is broken by :
(a) auxin (b) gibberellins
(c) ethylene (d) cytokinin
44. Mitosis occurs in :
(a) haploid individuals (b) diploid individuals
(c) in bacteria only (d) both 'a' and 'b'
45. Girth of dicot stem increases by the activity of:
(a) apical meristem
(b) intercalary meristem
(c) lateral meristem
(d) procambium meristem
46. Group of two or more than two plant species is called as :
(a) plant community (b) animal ecosystem
(c) Plant ecosystem (d) ecological niche
47. Which type of kidneys are found in amphibian?
(a) Holonephric (b) Mesonephric
(c) Pronephric (d) Metanephric
48. That haploid cell which divides by mitosis to form embryo sac is :
(a) megaspore mother cell
(b) microspore mother cell
(c) functional megaspore
(d) non-functional megaspore
49. One of the nucleotide of DNA:
(a) adenine
(b) deoxyadenylic acid
(c) adenosine
(d) deoxyuridine phosphate
50. Which parts of cell have enzymes for glycolysis?
(a) Cytoplasm (b) Mitochondria
(c) Golgi complex (d) Nucleus
51. Botanical name of species which cause white rust of Crucifers?
(a) *Peronospora parasitica*
(b) *Puccinia graminis*
(c) *Pythium debaryanum*
(d) *Albugo Candida*

52. What is haemozine?
 (a) Undigested part of blood in trophozoite of *Plasmodium*
 (b) Blood pigment of *Anopheles*
 (c) Decomposed blood in merozoites
 (d) Granules in the blood of infected person
53. Family Liliaceae is characterized by :
 (a) trimerous flower
 (b) tetramerous flower
 (c) pentamerous flower
 (d) zygomorphic flower
54. In sweet pea tendrils are modified :
 (a) stipule (b) stem
 (c) leaf (d) leaflet
55. Root cap is absent in :
 (a) mesophytes (b) hydrophytes
 (c) epiphytes (d) xerophytes
56. Which of the following nerve supplies organ of corti?
 (a) Auditory (b) Olfactory
 (c) Trochlear (d) Vagus
57. Nucleic acid segment which is used to find the position of a gene and it forms a hybrid with this gene would be?
 (a) Retrovirus (b) Probe
 (c) Vector (d) Clone
58. Insect's eggs are :
 (a) microlecithal and centrolecithal
 (b) megalecithal and isolecithal
 (c) megalecithal and centrolecithal
 (d) megalecithal and telolecithal
59. A pond is a:
 (a) biome (b) natural ecosystem
 (c) artificial ecosystem
 (d) community of plants and animals
60. In crustaceans, respiration takes place by:
 (a) gills (b) book lungs
 (c) ctenidia (d) trachea
61. Which of the two characters are typical of *Ascaris* ?
 (a) Sexual dimorphism and rhabditiform larva
 (b) Hermaphroditism and pseudocoelomic
 (c) Parasitism and metamerism
 (d) Multilocular heart.
62. In a monohybrid cross when F_1 is crossed with homozygous dominant parent then which type of offspring's will obtain?
 (a) Dominant; recessive (3:1)
 (b) Only recessive
 (c) Dominant: recessive (1: 1)
 (d) No recessive
63. Which one of the following body functions is not performed by kidneys?
 (a) Excretion (b) Osmoregulation
 (c) Regulation of blood volume
 (d) Destruction of dead blood corpuscles
64. Which gland is associated with fur hairs of Rabbit?
 (a) Mucous gland (b) Sweat gland
 (c) Mammary gland (d) Sebaceous gland
65. The study of fossils is called :
 (a) Palynology (b) Palaeontology
 (c) Fossil systematic (d) Pharmticrogyny
66. The body cavity of *Ascaris* is:
 (a) lined by mesoderm
 (b) not lined by mesoderm
 (c) formed by ectoderm
 (d) filled with parenchyma
67. The characteristic of blue-green algae is :
 (a) DNA without histone
 (b) nuclear membrane absent
 (c) 70S ribosomes
 (d) all of the above
68. Classification of sponges is primarily based on the:
 (a) body organization (b) body plan
 (c) skeleton (d) canal system
69. In mammals corpus luteum is found in which organ?
 (a) Brain (b) Ovary
 (c) Liver (d) Eyes
70. Which type of rhizoids are present in *Riccia*?
 (a) Unicellular smooth
 (b) Multicellular smooth
 (c) Unicellular smooth and tuberculated
 (d) Multicellular smooth and tuberculated

71. Which character is found only in mammals?
 (a) Neck (b) Diaphragm
 (c) Optic lobes of brain (d) Tail
72. Number of ATP obtained at the end of Krebs cycle are:
 (a) 2 ATP (b) 4 ATP
 (c) 36 ATP (d) 38 ATP
73. Which is correct about the bile of Rabbit?
 (a) It is synthesized by gall bladder and also stored there
 (b) It is an enzyme which emulsify the fats
 (c) It contain bile salts and bile pigments
 (d) Bilirubin present in it decomposes fats
74. Which type of vascular bundles are found in monocot stem?
 (a) Coilateral, open, endarch
 (b) Radial, open, diarch
 (c) Radial, open, mesarch
 (d) Coliateral, closed, endarch
75. Which type of larva found in *Hydra*?
 (a) Parenchymula (b) Amphiblastula
 (c) Trochophore (d) Hydrula
76. In rhizome of *Pteridium*, stele which is composed of two or more than two concentric rings of vascular bundles is called :
 (a) polycyclic
 (b) siphonostele
 (c) ectophloic siphonostele
 (d) cladophloic siphonostele
77. Which of the following is not the correct for gastrulation?
 (a) Archenteron is formed
 (b) all germinal layers are formed
 (c) Morphogenetic movements
 (d) Some blastomeres and blastula degenerate
78. The chemical formula of starch is:
 (a) $(C_6H_{10}O_5)_n$ (b) $(C_6H_{12}O_6)_n$
 (c) $(C_{12}H_{22}O_{11})_n$ (d) $CH_3COO_{11}H$
79. Which of the following mollusc is formed by a larva which have torsion?
 (a) *Lamelledens* (b) *Pila*
 (c) *Sepia* (d) *Octopus*
80. At which stage of spermatogenesis sperm acquire their whole structural maturity and they contain a haploid nucleus and other organs:
 (a) spermiogenesis (b) growth phase
 (c) multiplication phase (d) maturation phase
81. Which of the following is used during discovery of Calvin cycle?
 (a) *Spirogyra* (b) *Volvox*
 (c) *Chlamydomonas* (d) *Chlorella*
82. What happens in anterior part of *Amoeba* at the time of formation of pseudopodia?
 (a) plasma gel convert into plasma sol
 (b) plasma sol convert into plasma gel
 (c) ectoplasm convert into endoplasm
 (d) endoplasm convert into ectoplasm
83. Respiratory quotient of which diet is less than unity?
 (a) Carbohydrate (b) Fats
 (c) Organic acid (d) Sugar
84. In Rabbit at the time of fertilization zygote is formed in :
 (a) coelom (b) fallopian tube
 (c) uterus (d) vagina
85. Velamen and spongy tissue is found in :
 (a) breathing roots (b) parasitic roots
 (c) tuberous roots (d) epiphytic roots
86. The function of clitellum in *Pheretima* is :
 (a) formation of cocoon
 (b) secretion of hormone
 (c) nutrition of sperm (d) respiration
87. Which animal is "protochordate"?
 (a) *Herdmania* (b) *Balanoglossus*
 (c) *Branchiostoma* (d) *Botryllus*
88. Which of the following is not a function of water in cell ?
 (a) It provides energy for chemical reaction
 (b) It act as a solvent
 (c) It provides a medium for chemical reaction
 (d) It release hydrogen ions on ionization
89. In life cycle of *Plasmodium* exflagellation leads to:
 (a) formation of microgametes

- (b) formation of flagella in sperm
(c) destruction of flagella from sperm
(d) formation of sporozoites
90. In which of the following reptiles four chambered heart is present?
(a) Lizard (b) Snake
(c) Scorpion (d) Crocodile
91. Rate of transpiration is measured by :
(a) manometer (b) auxanometer
(c) potometer (d) barometer
92. Pigments present in chloroplast of *Ulothrix* :
(a) chlorophyll a, chl-b, fucoxanthin β - carotene
(b) chl-a, chl-b, chl-c, C-phyocyanin, C-phycoerythrin
(c) chl-a, chl-b. β - carotene, xanthophyll
(d) chl-a, chl-b, r-phyocyanine r-phycoerythrin
93. In *Mirabilis* a hybrid for red (RR) and white (rr) flower produces pink (Rr) flower. A plant with pink flower is crossed with white flower the expected phenotypic ratio is:
(a) red : pink : white (1:2:1)
(b) pink : white (1:1)
(c) red : pink (1 : 1)
(d) red : white (3 : 1)
94. Which one hormone of the pituitary of the Rabbit controls the protein metabolism and growth of skeleton?
(a) Iodo thyroxine
(b) Leutotrophic hormone
(c) Somatotrophic hormone
(d) Oxytosine
95. Which of the following is the site of lipid synthesis?
(a) Rough ER (b) Smooth ER
(c) Golgi bodies (d) Ribosome
96. Which of the following vessel in Rabbit starts with capillaries and ends in capillaries?
(a) Pulmonary artery (b) Renal vein
(c) Hepatic portal vein (d) Renal artery
97. Which character is not same in Aves and Mammals?
(a) Single systemic arch
(b) Metanephric kidney
(c) Seven cervical vertebrae
(d) Homeotherms
98. What is pollen grain?
(a) Microspore mother cell
(b) Male gamete
(c) Male gametophyte
(d) Partially developed embryo
99. Solenocytes and nephridia are respectively found in :
(a) Platyhelminth and Annelids
(b) Annelids and Nematoda
(c) Cnidaria and Mollusca
(d) Mollusca and Echinodermata
100. If a cell shrinks when placed in a solution this solution is:
(a) hypotonic (b) hypertonic
(c) isotonic (d) mesotonic

Answer – Key

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