

- Basis of life are
  - nucleic acids
  - proteins
  - nucleoproteins
  - amino acids
- Life span of parrot is
  - 140 years
  - 60 years
  - 80 years
  - 40 years
- Theory of 'saltations' was given by
  - G Mendel
  - Hugo de Vries
  - J B S Haldane
  - HJ Miller
- The animal group which does not exist in Galapagos island is
  - Insects
  - Protozoa
  - Crustacea
  - Amphibia
- Protists obtain their food as
  - photosynthesizers only
  - chemosynthesizers
  - heterotrophs only
  - Both (a) and (c)
- Photosynthetic bacteria have
  - pigment system I
  - pigment system II
  - Both (a) and (b)
  - some other kind of pigments, B890
- Diatoms do not decay easily because
  - they have siliceous walls
  - their body is impervious to water
  - they are chitinous
  - they are abundant in saline soil
- One of these protozoans is threat to apiculture and sericulture
  - Eimeria
  - Ceratium
  - Nosema
  - Monocystis
- Ergotamine tartarate extracted from Claviceps, is used for cure of
  - bodyache
  - headache
  - fever
  - severe stomach pain
- What type of sorus is present in Nephrolepis?
  - Coenosorus
  - Simple

- Mixed
  - None of these
- Pappus helps in dispersal of pollen in
    - Asteraceae
    - Brassicaceae
    - Malvaceae
    - Solanaceae
  - In which of the following groups are seeds present?
    - Psilophyta
    - Ginkgopsida
    - Lycopodiophyta
    - Bryophyta

13. Match the columns.

Column I	Column II
(Vitamins)	(Deficiency disease)
A. B,	1. Infertility
B. D	2. Scurvy
C. E	3. Beri-beri
D. C	4. Boneformity

Codes

	A	B	C	D
(a)	3	4	1	2
(b)	1	2	3	4
(c)	4	3	1	2
(d)	2	4	1	3

- One of the following is a connecting link between protozoans and poriferans
  - Cliona
  - Leucosolenia
  - Oscarella
  - Proterospongia
- The chordate features shared by the non-chordates are
  - bilateral symmetry
  - triploblastic condition and bilateral symmetry
  - metamerism
  - All of the above
- Which of the following ions are necessary for assembly of microtubules?
  - Na<sup>+</sup> and K<sup>+</sup>
  - Ca<sup>2+</sup> and Cl<sup>-</sup>
  - Ca<sup>+</sup> and Mg<sup>2+</sup>
  - Na<sup>+</sup> and Ca<sup>2+</sup>
- If T=40%, C=10% then G=? in a pollen cell
  - 40%
  - 10%
  - 91%
  - 20%

18. Nickel contributes to the formation of one of the following
- (a) urease (b) dehydrogenase  
(c) rubisco protein (d) nitrate reductase
19. If a stock has  $2n = 48$  and scion microspore mother cell has  $2n = 24$ ; then root cell and the microspores will have .....chromosomes respectively.
- (a) 12,48 (b) 48,12  
(c) 24,12 (d) 24, 96
20. The percentage of cell surface that is impenetrable for ions is
- (a) 1% (b) 99.9%  
(c) 90% (d) 73%
21. A fertilized egg of a plant has 40 chromosomes. The number of chromosomes present in the microspore mother cell is
- (a) 20 (b) 40  
(c) 60 (d) 80
22. Match the columns.
- | Column I         |  | Column II     |  |
|------------------|--|---------------|--|
| (Scientists)     |  | (Discoveries) |  |
| A. Stephan Hales | 1. Importance of light and chlorophyll |               |  |
| B. Ingen Housz   | 2. Presence of chlorophyll in plants   |               |  |
| C. Von Mohl      | 3. Product of photosynthesis is starch |               |  |
| D. Sach          | 4. Air and light control plant growth  |               |  |
- | Code | A | B | C | D |
|------|---|---|---|---|
| (a)  | 4 | 1 | 2 | 3 |
| (b)  | 3 | 2 | 1 | 4 |
| (c)  | 2 | 3 | 4 | 1 |
| (d)  | 4 | 3 | 2 | 1 |
23. Genotypic and phenotypic ratio 1 : 2 : 1 in the offsprings explain the principle of
- (a) dominance  
(b) blending inheritance  
(c) recessiveness  
(d) All of the above
24. Satellite of chromosome is
- (a) rich in RNA and deficient in DNA  
(b) rich in DNA and deficient in RNA  
(c) rich in protein  
(d) lacks DNA
25. Sickle cell anaemia is example of
- (a) Sex-linked inheritance  
(b) deficiency disease  
(c) autosomal heritable disease  
(d) infectious disease
26. Translocase is an enzyme required for
- (a) DNA replication (b) RNA synthesis  
(c) initiation of protein synthesis  
(d) protein synthesis chain elongation
27. Feathery stigma belongs to
- (a) wheat (b) pea
28. Inflorescence of Liliaceae is
- (a) actinomorphic (b) trimerous  
(c) pentamerous (d) imperfect
29. Bone marrow is absent in
- (a) reptilia (b) amphibia  
(c) fishes (d) birds
30. The property of semipermeability belongs to
- (a) cell wall (b) plasma membrane  
(c) mitochondria only (d) None of the above
31. Translocation of photosynthetic end products in sieve tubes is
- (a) 3-5 mm/h (b) 3-5 cm/h  
(c) 1-15 cm/h (d) 60-100 cm/h
32. Epidermis is specialized for
- (a) respiration (b) absorption  
(c) protection (d) All of these
33. The pH of stomach is 1.6, then which enzyme will digest protein?
- (a) Trypsin (b) Pepsin  
(c) Amylase (d) Erypsin
34. The normal type of embryo sac is 8-nucleated and
- (a) 8-celled (b) 7-celled  
(c) 6-celled (d) 5-celled
35. Embryo sac is
- (a) megaspore (b) microgametophyte  
(c) female gametophyte (d) megasporangium
36. The type of immunoglobulin present in the foetus are
- (a) IgD (b) IgE  
(c) IgG (d) IgM
37. For better survival of human Indian population, which is the most important step?
- (a) Afforestation  
(b) Reduction in population density  
(c) conservation of wild life including tribals  
(d) Both (a) and (c)
38. Leukaemia is caused by
- (a) Ca40 (b) Sr90  
(c) caesium (d) iodine
39. Ricewine is
- (a) beer (b) wine  
(c) cider (d) sake
40. An autoimmune disease is
- (a) B-lymphocytes induced  
(b) haemophilia  
(c) myasthenia gravis  
(d) None of the above
- Direction (41-60) In each of the following questions a statement of Assertion is given followed by a corresponding statement of Reason

- just below it. Of the statements mark the correct answer as
- (a) If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.  
 (b) If both Assertion and Reason are true but the Reason is not the correct explanation of the Assertion.  
 (c) If Assertion is true but Reason is false.  
 (d) If both Assertion and Reason are false.
41. Assertion In alcoholic drink, the alcohol is converted into glucose in liver.  
Reason Liver cells are able to produce glucose from alcohol by back fermentations.
42. Assertion Wrapping food with newspaper can be dangerous.  
Reason It is rich in cadmium which is toxic to health.
43. Assertion Tertiary consumers are green plants.  
Reason Microconsumers break down the dead protoplasm into simpler ones. They are last in the sequence of a food chain.
44. Assertion In a Graafian follicle, the primary oocyte and the follicle cells may be considered sibling cells.  
Reason Both are derived from oogonia.
45. Assertion Old ladies are prone to osteoporosis.  
Reason Oestrogen also maintain calcium balance in the bones and blood.
46. Assertion Phylloclades are adaptation for xerophytic habitats.  
Reason Ruscus, Casuarina have reduced or modified leaves to avoid transpiration.
47. Assertion In the hydrophytes, the xylem is not differentiated into different types of cells.  
Reason Xylem provides support and helps in the conduction of water which are not very important in hydrophytes.
48. Assertion Gene expression is a molecular mechanism by which a gene expresses a phenotype.  
Reason Structural genes are controlled by control genes.
49. Assertion Neurohypophysis is situated in the cells of stomach.  
Reason Neurohypophysis releases vasopressin and oxytocin.
50. Assertion Cataract is the condition on which lens become completely opaque.  
Reason In this condition, a person can see only near objects.
51. Assertion Sinus venosus is a thin-walled sac with little muscular tissue in primitive heart.  
Reason It receives venous blood through the hepatic veins.
52. Assertion B-cells (Beta cells) account for about 80% of the total number of islet cells.  
Reason They secrete a hormone called thyroxine.
53. Assertion Munutropa grows in pine forests with the roots of pines.  
Reason Saprophytes obtain their nutrition from dead organic matter.
54. Assertion Outermost layer of the bone is a fibrous connective tissue.  
Reason Matrix of bone is composed of protein ossein.
55. Assertion Perennials live for many years.  
Reason Their life cycle do not end with seed production.
56. Assertion 'Reindeer moss' is used by reindeer, caribou and other animals as fodder.  
Reason Reindeer moss is found in rainforests.
57. Assertion TMV is a rod-shaped virus.  
Reason It is made up of protein coat and RNA.
58. Assertion Japanese prepare a popular vegetable 'Kombu' prepared from Laminaria.  
Reason Laminaria is a fungus.
59. Assertion Mesophytes show well developed root system.  
Reason Mesophytes depend on moderate supply of water which they draw from their root.
60. Assertion Lichens are the plants growing perched on other plants.  
Reason Lichens unitedly make association with algae and fungi and show mutualism.

## Answer- Key

- |       |       |       |       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1. a  | 2. e  | 3. b  | 4. d  | 5. d  | 6. d  | 7. a  | 8. e  | 9. b  | 10. e |
| 11. a | 12. b | 13. a | 14. d | 15. d | 16. c | 17. b | 18. a | 19. b | 20. b |
| 21. b | 22. a | 23. b | 24. a | 25. c | 26. d | 27. a | 28. b | 29. d | 30. b |
| 31. d | 32. d | 33. b | 34. b | 35. c | 36. c | 37. d | 38. b | 39. d | 40. c |
| 41. e | 42. a | 43. d | 44. a | 45. a | 46. a | 47. a | 48. c | 49. d | 50. c |
| 51. a | 52. c | 53. b | 54. b | 55. a | 56. c | 57. a | 58. c | 59. a | 60. d |