1. The terms 'cytoplasm' and 'nucleoplasm' were given by
   1) Brown 2) Flemming
   3) Purkinje 4) Strasburger

2. Which of the following experiment is called physiological demonstration of Osmosis ?
   1) Potometer
   2) Bell jar experiment
   3) Thistle funnel - whose mouth is tied with egg membrane.
   4) Thistle funnel - whose mouth is tied with parchment paper.

3. The net gain of ATP during glycolysis is
   1) Two 2) Four
   3) Six 4) Eight

4. Coronary heart disease is due to
   1) Weakening of the heart valves.
   2) Insufficient blood supply to the heart muscles.
   3) Streptococci bacteria.
   4) Inflammation of pericardium.

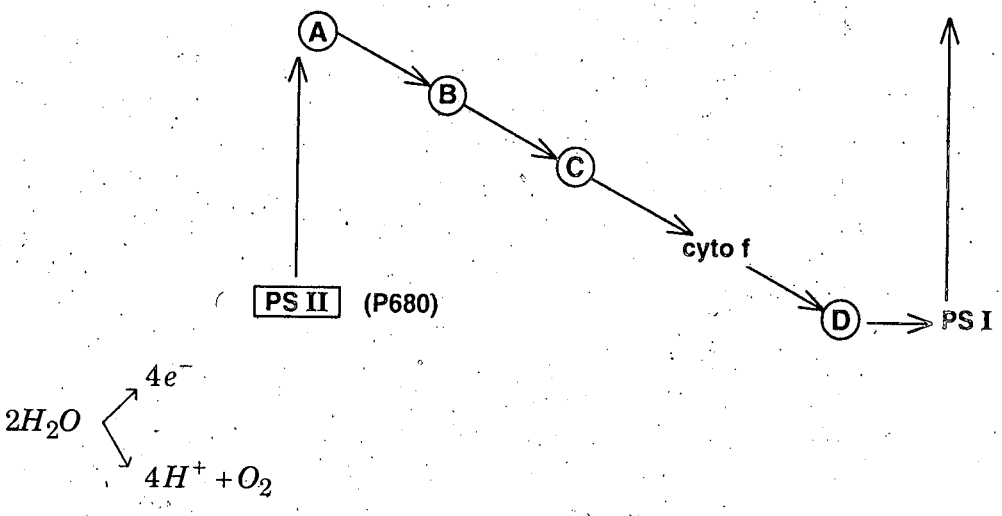
5. Manas sanctuary is located at
   1) Bihar 2) Gujarath
   3) Rajasthan 4) Assam

(Space for Rough Work)

6. In which of the following organisms, self fertilization is seen ?
   1) Earth worm
   2) Liver fluke
   3) Fish
   4) Round worm

7. Rauwolfia - serpentina belongs to ..... family.
   1) Liliaceae
   2) Fabaceae
   3) Apocynaceae
   4) Solanaceae

8.



In the above schematic diagram, which is plastocyanin ?
   1) A
   2) B
   3) C
   4) D

9. In ABO blood groups, how many phenotypes are found ?
   1) 1
   2) 4
   3) 6
   4) 8

10. The tumor inducing capacity of Agrobacterium - tumaefaciens is located in large extra chromosomal plasmids called
   1) pBR 322
   2) Ti plasmid
   3) Ri plasmid
   4) lambda phage

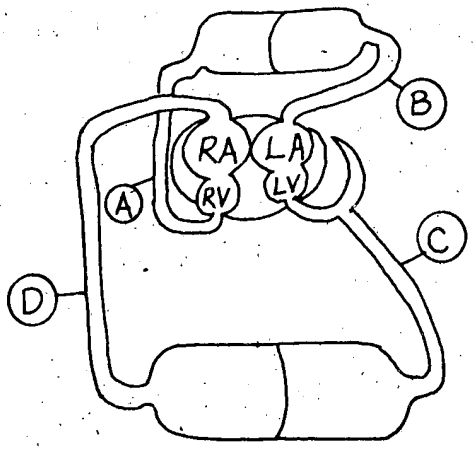
(Space for Rough Work)

11. Name the class of the - Mycota, which is commonly called - 'fungi imperfecti'.
    1) Zygomycota
    2) Basidiomycota
    3) Deuteromycota
    4) Ascomycota

12. Which one is not correct about Krebs' cycle ?
    1) It occurs in mitochondria.
    2) It starts with six carbon compound.
    3) It is also called citric acid cycle.
    4) The intermediate compound which links glycolysis with Krebs' cycle is malic acid.

13. Which would do maximum harm to a tree ?
    1) Loss of all its bark.
    2) Loss of half of its leaves.
    3) Loss of half of its branches.
    4) Loss of all of its leaves.

14.



RA - Right Auricle

RV - Right Ventricle

LA - Left Auricle

LV - Left Ventricle

In the above given diagram which blood vessel represents vena cava ?
    1) A
    2) B
    3) C
    4) D

15. Rh – ve person donated blood to Rh +ve person for the second time. Then,
    1) Rh +ve blood starts reacting to Rh –ve blood.
    2) Rh +ve person will die.
    3) Rh –ve person will die.
    4) Nothing happens to Rh +ve person.

(Space for Rough Work)

16. Checking of reradiating heat by atmospheric dust O_3, CO_2 and water vapours is –

1) Ozone layer effect
2) Radioactive effect
3) Green house effect
4) Solar effect

17. Mutation can not change

1) Enzyme
2) DNA
3) RNA
4) Environment

18. Liberation of O_2 when green cells in water are exposed to sunlight in the presence of suitable acceptor is called –

1) Blackmann's reaction
2) Hill's reaction
3) Arnon's reaction
4) Emerson's enhance effect

19. Guttation is mainly due to

1) Osmosis
2) Transpiration
3) Root pressure
4) Imbibition

20.
- Statement A : All Metatherian are placental mammals.
- Statement B : All placental mammals have menstrual cycle.

1) Both the statements A and B are true.
2) Both the statements A and B are false.
3) Statement A is true and Statment B is false.
4) Statement B is true and Statment A is false.

(Space for Rough Work)

21. Population density of terrestrial organisms is measured in terms of individual per

1) Meter
2) $Meter^2$
3) $Meter^3$
4) $Meter^4$

22. Nitrogenous waste products are eliminated mainly as –

1) urea in tadpole as well as in adult frog.
2) urea in tadpole and ammonia in adult frog.
3) urea in tadpole and uric acid in adult frog.
4) urea in adult frog and ammonia in tadpole.

23. In man, the blue eye colour is recessive to the brown eye colour. If the boy has brown eye and his mother is blue eyed, what would be the phenotype of his father ?

1) Green eye
2) Blue eye
3) Black eye
4) Brown eye

24. Munch hypothesis is based on

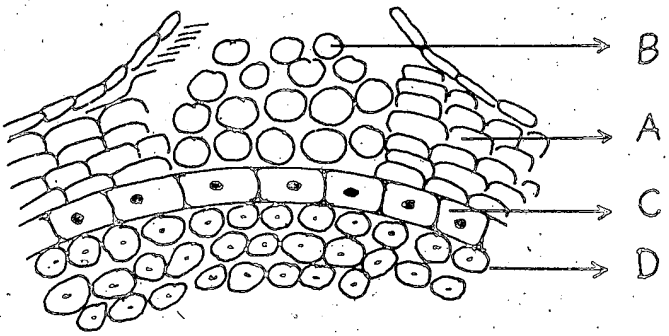
1) Translocation of food due to Turgor Pressure (TP) gradient.
2) Translocation of food due to imbibition force.
3) Translocation of food due to TP gradient and imbibition force.
4) None of these

25. Interferons are

1) Complex protein
2) Anti-clotting protein.
3) Anti-bacterial protein
4) Anti-viral protein.

(Space for Rough Work)

26. In the diagram of lenticel identify the parts as **A, B, C, D.**



1) **A**-Complementary cells, **B**– Phellogen, **C**– Phelloderm, **D**– Periderm
2) **A**– Complementary cells, **B**– Phellum, **C**– Periderm, **D**– Phelloderm
3) **A**– Phellum, **B**– Periderm, **C**– Phellogen, **D**– Phelloderm
4) **A**– Phellum, **B**– Complementary cells, **C**– Phellogen, **D**– Phelloderm

27. Sterlization of tissue culture medium is done by –

1) Mixing the medium with antifungal agents.
2) Keeping the medium at -20^0C.
3) Autoclaving of medium at 120^0C for 15 minutes.
4) Filtering the medium through fine sieve.

28. Match the following :

A.	Leishmania – dorovani	p. Malaria
B.	Wuchereria – bancrofti	q. Amoebiosis
C.	Trypanosoma – gambiense	r. Kala azar
D.	Entamoeba – histolytica	s. Sleeping sickness
		t. Filariasis

1) A – r B – t C – s D – q
2) A – r B – t C – q D – p
3) A – s B – r C – q D – p
4) A – r B – s C – t D – t

29. The idea of Natural selection as the fundamental process of evolutionary changes was reached

1) Independently by Charles Darwin and Alfred Russel Wallace in 1900
2) By Charles Darwin in 1866.
3) By Alfred Russel Wallace in 1901.
4) Independently by Charles Darwin and Alfred Russel Wallace in 1859.

30. Auxins originates at the tip of the stem and controls growth elsewhere. The movement of auxins is largerly

1) Acropetal and basipetal
2) Centropetal
3) Basipetal
4) Acropetal

(Space for Rough Work)

31. If a length of DNA has 45,000 base pairs, how many complete trans will the DNA molecule take ?
    1) 45
    2) 450
    3) 4,500
    4) 45,000

32. The process in which mature differentiated cells reverse to meristematic activity to form callus is called
    1) Cyto differentiation
    2) Redifferentiation
    3) Dedifferentiation
    4) Differentiation

33. The lateral roots originate from
    1) Epiblema
    2) Cortical cells below root hairs
    3) Endoderm cells
    4) Pericycle cells

34. Which accessory genital gland occurs only in mammalian male ?
    1) Cowper's gland
    2) Bartholian gland
    3) Prostate gland
    4) Perineal gland

35. When the concentration of the soil solutes is low, the absorption of water is
    1) Increased
    2) Decreased
    3) Remain normal
    4) Stopped

(Space for Rough Work)

36. Edaphology is

1) Study of Snakes
2) Study of Amphibians
3) Study of Elephants
4) None of these

37. Pineal gland of human brain secretes melatonin concerned with .....

1) Colouration of skin
2) Sleep
3) Anger
4) Body temperature

38. When a tall plant with round seeds (TTRR) crossed with a dwarf plant with wrinkle seeds (tfrr). The F_1 generation consists of tall plants with round seeds. What would be the proportion of dwarf plant with wrinkle seeds in F_1 generation ?

1) 0
2) $\frac{1}{2}$
3) $\frac{1}{4}$
4) $\frac{1}{16}$

39. Cell wall consists of

1) Lignin, hemi cellulose, pectin and lipid
2) Lignin, hemi cellulose, pectin and cellulose
3) Lignin hemi cellulose, protein and lipid
4) Hemi cellulose, cellulose, tubulin and lignin.

40. The post and tail is present in –

1) Invertebrates
2) Vertebrates
3) Chordates
4) In all of them

(Space for Rough Work)

41. Synthesis of food in C_4 pathway occurs in Chlorophyll of

1) Spongy mesophyll
2) Palisade cells
3) Guard cells
4) Bundle sheath

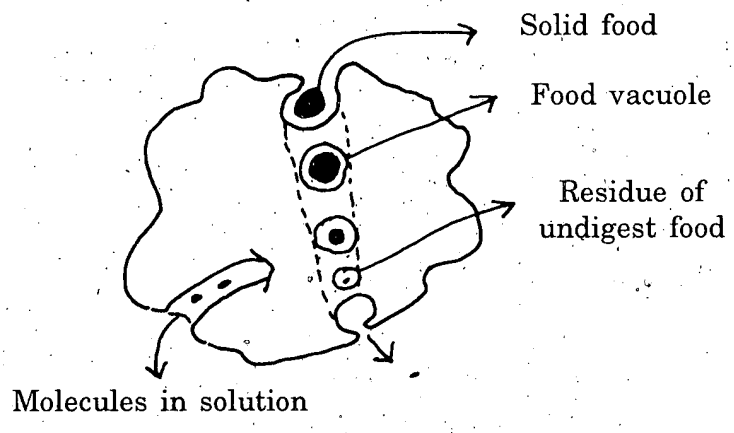
42. The sequence of structural gene in lac operon concept is

1) lac Y, lac Z, lac A
2) lac Z, lac Y, lac A
3) lac A, lac Y, lac Z
4) lac A, lac Z, lac Y

43. Pericarp and placentae are edible part of simple fleshy berry fruit

1) Tomato
2) Date palm
3) Jack fruit
4) Banana

44. In the diagram, which of the following processes are shown in Amoeba ?



1) Phagocytosis
2) Pinocytosis
3) Exocytosis
4) All of these

45. An essential element is that which

1) is found in plant ash.
2) is available in the soil.
3) improve health of the plant.
4) is irreplaceable and indispensable for growth of plants.

(Space for Rough Work)

46. Nucleic acid occurs in

1) Cytoplasm
2) Mitochondria and chloroplast
3) Golgibody
4) Lysosomes.

47. The number of mitotic cell division required to produce 256 cells from single cell would be

1) 6
2) 8
3) 10
4) 12

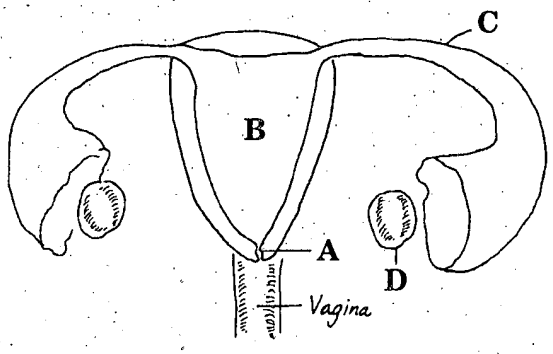
48. The central dogma of protein synthesis in teminious is

1) DNA → DNA → m–RNA → Protein
2) m–RNA → g.RNA → DNA → Protein
3) g.RNA → DNA → m–RNA → Protein
4) DNA → G–RNA → m–RNA → Protein

49. In tissue culture roots can be induced by

1) No cytokinin and only auxins.
2) Higher concentration cytokinin and lower concentration auxins.
3) Lower concentration of cytokinin and higher concentration of auxins.
4) Only cytokinin and no auxins.

50.



1) **A**– uterus, **B**– uterine cavity, **C**– oviducal funnel, **D**– ovary
2) **A**– cervix, **B**– uterine cavity, **C**– fallopian tube, **D**– ovary
3) **A**– oviduct, **B**– uterus, **C**– outduct, **D**– ovary
4) **A**– cervix, **B**– uterus, **C**– ovary, **D**– tumour

(Space for Rough Work)

51. The first process by which water enters into the seed coat when a seed is placed in suitable environment for germination is

1) Absorption
2) Imbibition
3) Osmosis
4) Active transport

52. ..... is a taxon, which is likely to move into endangered category in near future, if conditions prevail as it is

1) Rare
2) Extinct
3) Vulnerable
4) Endanger

53. A localised inflammatory response appears at the site of infection causes redness, swelling, pain and heat due to certain chemical, they are

1) Histamin and cerumen
2) Prostaglandins and cerumen
3) Histamin and prostaglandins
4) Cerumen and mucus.

54. Non keratimised stratified epithelium occurs in

1) Vagina and cervix
2) Buccal cavity and anus
3) Vagina, cervix and buccal cavity
4) Vagina, cervix, buccal cavity and anus

55. Succus entericus is secreted by ?

1) Crypts of Leiberkuhn
2) Brunner's gland
3) Both (1) and (2)
4) None of these

(Space for Rough Work)

56. Residual volume is

1) Greater than vital capacity
2) Greater than fidal volume.
3) Lesser than tidal volume.
4) Greater than inspiratory volume.

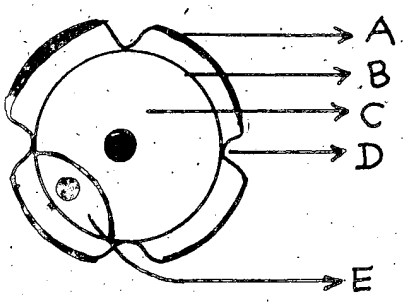
57. Find the odd example.

1) Sea cucumber
2) Sea urchin
3) Sea lily
4) Sea fan

58. Which one is correct ?

1) Neuron = Cyton + Dendrite + Axon + Synapse
2) Lymph = Plasma + RBC + WBC
3) Blood = Plasma + RBC + WBC + Blood platelets
4) Plasma = Blood – lymphocytes

59. In the given diagram name the parts A, B, C and D.



1) **A**– Intine, **B**– Exine, **C**– Germ pore, **D**– Generative cell, **E**– Vegetative cell
2) **A**– Exine, **B**– Intine, **C**– Vegetative cell, **D**– Germ pore, **E**– Generative cell
3) **A**– Germ pore, **B**– Generative cell, **C**– Intine, **D**– Exine, **E**– Vegetative cell
4) **A**– Germ pore, **B**– Generative cell, **C**– Exine, **D**– Intine, **E**– Vegetative cell

60. The largest RBC's have been seen in

1) Amphibia
2) Man
3) Elephant
4) Whale

(Space for Rough Work)