PRACTICE SET-3

1. 'The law of limiting factor' was proposed by
a. Blackman **b.** Liebig
c. Hatch and Slack **d.** Arnol

2. Use and disuse theory was put forward by:
a. Lamarck **b.** Darwin
c. Huxley **d.** Wallace

3. Most primitive living mammals which provide an evidence of organic evolution from geographical distribution are found in:
a. China **b.** India
c. Australia **d.** Africa

4. Trilobites were evolved during which of the following period
a. Salvian **b.** Cambrian
c. Ordovician **d.** Precambrian

5. Longest known virus is:
a. $\varnothing \times 174$ **b.** TMV
c. Citrus tristeza **d.** T_1 phage

6. The group of viruses which attack blue-green algae are termed:
a. Bacteriophages
b. Cyanophages
c. Mosaic viruses
d. Phages only

7. Which of the following is an insect?
a. Moth **b.** Mite
c. Prawn **d.** Scorpion

8. Complete metamorphosis is found in:
a. Housefly and mosquito
b. Housefly and cockroach
c. Mosquito and cockroach
d. None of these

9. Asexual reproductive bodies in bacteria are:
a. Akinetes
b. Heterocysts
c. Chloroplasts
d. Conidia

10. Wine turns sour because of:
a. Heat
b. Aerobic bacteria
c. Anaerobic bacteria
d. Exposure to light

11. Milk is converted to curd by-
a. *Xanthomonas citri*
b. *Bacillus magaterium*
c. *Acetobacter aceti*
d. *Streptococcus lactis*

12. The axis of inflorescence is known as:
a. Thalamus **b.** Torus
c. Peduncle **d.** Pedicel

13. In cyathium inflorescence the ratio between male: female flowers is:
a. One : many **b.** Many : one
c. One : one **d.** Many : many

14. In a raceme inflorescence, flowers are:
a. Arranged in basipetal succession
b. Arranged in acropetal succession
c. May be acropetal or basipetal
d. None of the above is correct

15. A transverse section of monocot stem can be distinguished from that of a dicot stem by observing the
a. Vascular bundles which are scattered in monocot stems
b. Sunken Stomata
c. Cortex
d. Concentric vascular bundles

16. In dicot stems the vascular bundles are
a. Scattered
b. Arranged in a ring
c. Xylem and phloem are situated alternately
d. Amphicribral

17. Pith which forms the central core of stem is also known as
a. Medulla
b. Epiblema
c. Bast
d. Ground tissue

18. Elastic cartilage matrix contains:
a. Elastic-fibres only
b. Collagen fibres only
c. Both elastic and collagen fibres
d. Myofibrils

19. Difference between the femur of rabbit and femur of frog is:
a. Haversian system of canals is found in the shaft of femur of rabbit, not of frog
b. Yellow bone marrow is found
c. Frog has spongy bones
d. Osteocytes are of different types

20. A trisomic individual has the following chromosome number
a. 2n – 1 **b.** 2n + 2
c. 2n +1 **d.** 2n + 3

21. The site of synthesis and degradation of H_2O_2 in a plant cell is:
a. Lysosome **b.** Spherosome
c. Peroxisome **d.** Microsome

22. In the green plant cell the genes required for the synthesis of chlorophyll pigments resides in the:
a. Chloroplast DNA **b.** Cytoplasm
c. Nucleus **d.** Cell membrane

23. Terminalisation is a process related to
a. Mitosis **b.** Meiosis
c. Diakinesis **d.** Cytokinesis

24. Formation of bivalents during meiosis occurs at:
a. Leptotene **b.** Diplotene
c. Pachytene **d.** Zygotene

25. When ribosomes move along mRNA, the tRNA and synthesized polypeptide are transferred from A-site to P-site, the process is called:
a. Translocation **b.** Transpeptidation
c. Transition **d.** Transversion

26. The following cell organelles are required for synthesis of secretory proteins:
1. Ribosome **2.** Golgi complex
3. Lysosomes **4.** ER
Find their correct sequence in which they are required:
a. 1 3 2 4 **b.** 1 4 2 3
c. 4 1 2 3 **d.** 1 4 3 2

27. Wilting occurs when
a. rate of transpiration is higher than absorption
b. rate of absorption is higher than transpiration
c. excess root pressure
d. high relative humidity in air

28. Osmotic pressure of a solution is:
a. more than that of pure solvent
b. less than that of pure solvent
c. variable depending upon concentration
d. equal to that of pure solvent

29. Stomata that can also open at night, present in:
a. xerophytes
b. gametophytes
c. hydrophytes
d. None of these

30. Woodward (1669) observed that plant grew better in muddy water than in rain water because
a. Muddy water had most of essential elements dissolved in it
b. Muddy water had micro nutrients dissolved in it
c. Muddy water had macro nutrients dissolved in it
d. None of these

31. If a plant material is dried and burnt in a crucible, the residue would contain
a. Oxides and carbonates of about ten elements
b. Carbon and phosphorus
c. Nitrates and sulphates only
d. Oxides and carbonates of Ca and Mg only

32. Emerson found red drop in wavelength
a. 660 nm **b.** 670 nm
c. 680 nm **d.** 680–700 nm

33. In cyclic photophosphorylation PH I donate electrons to
a. Plastoquinone **b.** Plastocyanin
c. NADP **d.** Cytochrome b_6

34. Light reaction of photosynthesis form
a. Carbohydrates **b.** ATP
c. NADP and O_2 **d.** $NADPH_2$, O_2 and ATP

35. Roots can take oxygen when it is in
a. Gaseous form
b. Solution with water
c. Chemical combination with other compounds
d. Liquid form

36. What is active glucose?
a. FAD–glucose **b.** NAD–glucose
c. Phosphoglucose **d.** Glycerophosphate

37. Which of the following is not likely to be found on sea shore?
a. Green algae **b.** Red algae
c. Brown algae **d.** Moss

38. Ergotism is caused by
a. *Claviceps*
b. *Penicillium*
c. *Aspergillus*
d. *Rhizobium*

39. Which of the following pair is monosaccharide?
a. Glucose and sucrose
b. Ribose and maltose
c. Fructose and glucose
d. Ribose and sucrose

40. Beauty vitamin is:
a. Vitamin A **b.** Vitamin C
c. Vitamin E **d.** Vitamin K

41. ATP is a:
a. Nucleotide **b.** Nucleosome
c. Purine base **d.** Nucleoside

42. Cytochrome is:
a. Metallo-flavoprotein
b. Iron-containing porphyrin pigment
c. Glycoprotein
d. Lipid

43. Lymph node acts as _____ for the microorganisms.
a. Messengers
b. Filters
c. Scavengers
d. None of these

44. The chief function of lymph nodes in mammalian body is to:
a. destroy the old and worn out red blood cells
b. produce WBCs
c. produce a hormone
d. collect and destroy pathogens

45. Consider the following four statements (A-D) about certain desert animals such as kangaroo rat.
(A) They have dark colour and high rate of reproduction and excrete solid urine.
(B) They do not drink water, breathe at a slow rate to conserve water, and have their body covered with thick hairs.
(C) They feed on dry seeds and do not require drinking water.
(D) They excrete very concentrated urine and do not use water to regulate body temperature.
Which of two of the above statements for such animals are true?
a. C and A **b.** A and B **c.** C and D **d.** B and C

46. Which one of the following is not a part of renal pyramid?
a. Loop of Henle **b.** Peritubular capillaries
c. Convoluted tubules **d.** Collecting ducts

47. Black bands of myofibrils are known as
a. Isometric band **b.** Anisotropic band
c. Isotonic band **d.** Heterotropic band

48. The muscle fatigue occurs due to accumulation of
a. Pyruvic acid **b.** ATP
c. Lactic acid **d.** Eroman CO_2

49. Anti-ageing hormone melatonin is produced by:
a. The pineal body **b.** Middle lobe of pituitary
c. Adenophysis **d.** Testis

50. Parathormone causes:
a. Hypercalcaemia **b.** Hypocalcaemia
c. Hyperglycaemia **d.** Hypoglycaemia

Answers and Solutions

1. **(a)** 'The law of limiting factor' was proposed by Blackman.
2. **(a)** Use and disuse theory was put forward by Lamarck.
3. **(a)** China
4. **(b)** Trilobites were evolved during Cambrian period.
5. **(b)** *TMV* was the first *virus* to be discovered over a century ago and was the first *virus* ever purified.
6. **(b)** Cyanophages is the group of viruses which attack blue-green algae.
7. **(a)** Moth is an insect.
8. **(a)** Complete metamorphosis is found in housefly and mosquito.
9. **(d)** Asexual reproductive bodies in bacteria are conidia.
10. **(b)** Wine turns sour because of aerobic bacteria.
11. **(d)** *Lactococcus lactis* is converted milk to curd.
12. **(c)** The axis of inflorescence is known as peduncle.
13. **(b)** Many : One
14. **(b)** In a raceme inflorescence, flowers are arranged in acropetal succession. When the main axis of *raceme* is branched and the lateral branches bear the flowers, the *inflorescence* is known as compound *raceme* or panicle, *e.g.,* neem, etc.
15. **(a)** A.T.S. of monocot stem can be distinguished from that of a dicot stem by observing the vascular bundles which are scattered in monocot stems.
16. **(b)** In dicot stems the vascular bundles are arranged in a ring.
17. **(a)** Pith which forms the central core of stem is also known as medulla.
18. **(c)** Elastic cartilage matrix contains both elastic and collagen fibres.
19. **(a)** Haversian system of canals is found in the shaft of femur of rabbit, not of frog.
20. **(c)** 2n +1

21. **(c)** The site of synthesis and degradation of H_2O_2 in a plant cell is peroxisome.

22. **(a)** C*hloroplast genome chloroplast DNA* (cpDNA) is also known as plastid DNA (ptDNA).

23. **(c)** Terminalisation is a process related to diakinesis.

24. **(d)** Formation of bivalents during meiosis occurs at zygotene.

25. **(a)** When ribosomes move along mRNA, the tRNA and synthesised polypeptide are transferred from A-site to P-site, the process is called translocation.

26. **(b)** (1-4-2-3): Ribosome, ER, Golgi complex and Lysosomes.

27. **(a)** Wilting occurs when rate of transpiration is higher than absorption.

28. **(a)** Osmotic pressure of a solution is more than that of pure solvent.

29. **(a)** Stomata that can also open at night, present in xerophytes. A plant species that is well-adapted to survive in an environment with little liquid water is called a *xerophyte*.

30. **(c)** Muddy water had macro nutrients dissolved in it.

31. **(a)** If a plant material is dried and burnt in a crucible, the residue would contain oxides and carbonates of about ten elements.

32. **(d)** 680–700 nm red drop in wavelength.

33. **(c)** In cyclic photophosphorylation, PH I donates electrons to NADP.

34. **(d)** Light reaction of photosynthesis form $NADPH_2$, O_2 and ATP.

35. **(a)** Roots can take oxygen when it is in gaseous form.

36. **(c)** Phosphoglucose, a glycolytic enzyme, is an essential enzyme in all tissues.

37. **(d)** Moss

38. **(a)** Ergotism is caused by *Claviceps.*

39. **(c)** A pair of fructose and glucose is monosaccharide.

40. **(c)** Beauty vitamin is vitamin E. *Vitamin E* is a vital nutrient for good health, and it's found in a wide variety of foods and supplements.

41. **(a)** ATP is a nucleotide.

42. **(b)** Cytochrome is iron-containing porphyrin pigment.

43. **(d)** None of these

44. **(d)** The chief function of lymph nodes in mammalian body is to collect and destroy pathogens.

45. **(c)** They feed on dry seeds and do not require drinking water. And they excrete very concentrated urine and do not use water to regulate body temperature.

46. **(c)** Convoluted tubules

47. **(b)** Black bands of myofibrils are known as anisotropic band.

48. **(c)** The muscle fatigue occurs due to accumulation of lactic acid. Lactic acid is an alpha-hydroxy acid (AHA) due to the presence of carboxyl group adjacent to the hydroxyl group. It is used as a synthetic intermediate in many organic synthesis industries and in various biochemical industries. The conjugate base of lactic acid is called lactate.

49. **(a)** Anti-ageing hormone melatonin is produced by the pineal body.

50. **(a)** Parathormone causes hypercalcaemia. Hypercalcaemia is a condition in which the calcium level in your blood is above normal.

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