PRACTICE SET-4

1. Who is famous in the field of palaeobotany?
a. Bose J.C. **b.** Birbal Sahni
c. Metha K.C. **d.** Maheshwari P

2. Who wrote the book '*Genetics and Origin of Species*'
a. R.A. Fisher **b.** G.L. Stebbins
c. Th. Dobzhansky **d.** J.B.S. Haldane

3. The recapitulation theory or biogenetic law was proposed by:
a. Weismann **b.** Mendel
c. Ernst Haeckel **d.** Von Baer

4. Adaptation of a species is its
a. Ecdysis **b.** Metamorphosis
c. Acquired character **d.** Hereditary character

5. Which one of the following sequences was proposed by Darwin and Wallace for organic evolution?
a. Variations, natural selection, overproduction, constancy of population size.
b. Overproduction, variations, constancy of population size, natural selection.
c. Variations, constancy of population size, overproduction, natural selection.
d. Overproduction, constancy of population size, variations, natural selection.

6. Virion refers to:
a. Capsid of virus **b.** Dead virus
c. Nucleic acid of virus **d.** Complete from of virus

7. Viruses have:
a. Chromosomes
b. Ribosomes
c. Nucleic acids
d. Carbohydrates

8. The virus responsible for AIDA is an example of a (an):
a. Adeno virus
b. Mosaic virus
c. T-even virus
d. Retrovirus

9. Starfish belongs to:
a. Porifera
b. Coelenterata
c. Echinodermata
d. Arthropoda

10. Natural pearls belong to:
a. Arthropoda
b. Protozoa
c. Mollusca
d. Echinodermata

11. The peculiar pungent smell of cockroach is produced by the secretions of:
a. Pheromones **b.** Flame cells
c. Abdominal glands **d.** Cervical glands

12. Circular DNA is seen in-
a. Higher plants **b.** Bacteria
c. Fungus **d.** Viruses

13. The visible appearance of growths of bacteria seen on laboratory culture media are called:
a. A thallus **b.** Spores
c. Colonies **d.** Tissues

14. Bacteria resemble:
a. *Nostoc species* **b.** Mitochondria
c. *Chlamydomonas* **d.** None of the above

15. Exalbuminous seeds are found in-
a. *Tamarindus indica* **b.** *Cicer arietinum*
c. *Ricinus communis* **d.** Both in **a.** and **b.**

16. Endospermic seeds are found in:
a. *Carica papaya* **b.** *Dolichos lablab*
c. Gourd **d.** *Pisum sativum*

17. In a leaf protoxylem faces towards
a. Upper epidermis
b. Lower epidermis
c. Centre of vascular bundle
d. None correct

18. In a normal dicot leaf the phloem in the midrib faces towards
a. Upper epidermis
b. Lower epidermis
c. Centre of vascular bundle
d. None correct

19. Pneumatic bones are found in:
a. Flying fish
b. House lizard
c. Pigeon
d. Frog's tadpole

20. In the vertebral column of a child number of vertebrae is:
a. 30 **b.** 31
c. 32 **d.** 33

21. In the eukaryotic cells the transcription of RNA takes place in the:
a. Euchromatin region **b.** Heterochromatin region
c. Nucleolus **d.** Cytoplasm

22. Which one of the following does not show a circular DNA?
a. Bacterial cell **b.** Nucleus
c. Mitochondrion **d.** Chloroplast

23. A temporary suppression of cell division activity in cell populations can be brought about by:
a. Colchicine treatment
b. Radiating them with ultraviolet rays
c. Reducing carbohydrate supply
d. Treating them with hormones

24. Phragmoplast is:
a. Plastid capable of fragmentation
b. Plastid capable of duplication
c. Cell plate formed by ER and products of dictyosome (secretory vesicles) during cytokinesis
d. Cell plate formed by ER, dictyosome, (secretory vesicles) and portion of spindle fibres

25. The presence of signal peptide is characteristic of which protein when they are synthesised:
a. Tubulin **b.** Actin
c. Flagellin **d.** Insulin

26. Which of the following statement is true about protein synthesis over ribosome?
a. All amino acids first enter A site and then P site
b. All amino acids first enter P site and then A site
c. All but the first amino acids amino acid first enter A site then P site
d. All but the last amino acid first enter A site then P site

27. pH of phloem sap is:
a. 8.7–9.6 **b.** 7.5–8.6
c. 5.0–6.0 **d.** 2.4–0.8

28. Amount by which water potential is reduced due to presence of solute is called
a. pressure potential
b. solute potential
c. matric potential
d. None of these

29. For growth of which of the following sodium is required
a. *Lycopersicon esculentum*
b. *Ziziphus*
c. *Nigella sativa*
d. *Atriplex*

30. Which of the following shows that metabolic energy is required in the absorption of ions?
a. More ions absorption in presence of oxygen
b. Less absorption of ions in presence of oxygen
c. More ions absorption in presence of ATP
d. More ions absorption in presence of NAD

31. Which of element is given in less quantity to develop attractive colour to apple?
a. Zinc **b.** Hydrogen
c. Nitrogen **d.** Chlorine

32. Which of the following **correctly** ranks the following structures terms of size, largest to smallest? Chloroplast (C), Mysophyll cell (MC), Photosystem (P), chlorophyll molecule (M), thylakoid (Y)
a. P–MC–T–C–M **b.** MC–C–T–M–P
c. P–MC–C–T–M **d.** MC–T–P–C–M

33. Which elements are essential for photolysis of water?
a. Mg and P **b.** Zn and Iodine
c. Mn and Chlorine **d.** Ca and Chlorine

34. Robinson's ester is
a. Glucose–1, 6–diphosphate
b. Glucose–6–phosphate
c. Fructose–6–phosphate
d. None of the above

35. Which of the following is directly affected by deficiency of Fe?
a. Glycolysis
b. Calvin cycle
c. DPD of cell
d. Oxidative photophosphorylation

36. Fruits keep better in refrigeration, this is due to
a. Non-availability of O_2
b. Absence of moisture
c. Accumulation of O_2
d. Inactivation of respiration

37. Green plants without root, stem and leaves, but with a simple filamentous plant body is called
a. Thallus
b. Mycelium
c. Hyphae
d. Corm

38. When the phloem and cambium are present on both sides of xylem, the vascular bundle is called
a. Concentric **b.** Bicollateral
c. Radial **d.** Collateral

39. Intracellular energy wheel is:
a. Glycolysis **b.** Krebs cycle
c. Lipogenesis **d.** None of these

40. We obtain major supply of energy from glucose via
a. Alcoholic fermentation **b.** Krebs cycle
c. Lactic acid fermentation **d.** Fat metabolism

41. A clot of blood contains
a. Prothrombin **b.** Thrombin
c. Fibrin **d.** Fibrinogen

42. An anticoagulant used for preventing clotting *in vitro* is sodium oxalate. It prevents clot formation by:
a. Inhibiting clotting factor VIII activity
b. Combining with cations in the blood
c. Getting itself deposited over the surface of RBC
d. Blocking the fibrinogen activity

43. Which of the metallic ions is essential for blood clotting?
a. Na^{++} **b.** Ca^{++}
c. K^{+} **d.** Fe^{++}

44. RBC contain an enzyme important for the transport of carbon dioxide, the enzyme is:
a. Carboxypeptidase **b.** Carbonic anhydrase
c. Glucose phosphatase **d.** ATPase

45. Natural anticoagulants are:
a. Heparin and hirudin
b. Ptyalin
c. Histamines
d. Acetylcholine

46. Which one of the following correctly explains the function of a specific part of human nephrons?
a. Afferent arteriole—Carries blood away from the glomerulus towards renal vein.
b. Podocytes—Create minute spaces (slit pores) for the filteration of blood into the Bowman's capsule.
c. Henle's loop—Most reabsorption of the major substances from the glomerular filtrate.
d. Distal convoluted tubule—Reabsorption of K^{+} ions into the surrounding blood capillaries.

47. Uricotelic mode of passing out nitrogenous wastes is found in:
a. Insects and amphibians
b. Reptiles and birds
c. Birds and annelids
d. Amphibians and reptiles

48. Which one of the following statements is **correct** with respect to kidney function regulation?
a. During summer when body loses lot of water by evaporation, the release of ADH is suppressed.
b. When someone drinks lot of water, ADH release is suppressed.
c. Exposure to cold temperature stimulates ADH release.
d. An increase in glomerular blood flow stimulates formation of Angiotensin II.

49. The functional unit of the contractile system in the striped muscle is:
a. Z–band **b.** A–band
c. Myofibril **d.** Sarcomere

50. The longest visceral muscle cell is present in
a. Vas deferens **b.** Normal uterus
c. Pregnant uterus **d.** Abdomen

Answers and Solutions

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2. **(c)** Theodosius Dobzhansky, who wrote the book '*Genetics and Origin of Species*'.

3. **(c)** The recapitulation theory or biogenetic law was proposed by Ernst Haeckel.

4. **(d)** Adaptation of a species is its hereditary character.

5. **(d)** Overproduction, constancy of population size, variations, natural selection sequences was proposed by Darwin and Wallace for organic evolution.

6. **(d)** Virion refers to complete form of virus.

7. **(c)** Viruses has nucleic acids.

8. **(d)** The virus responsible for AIDA is an example of a retrovirus.

9. **(c)** Echinodermata is a phylum of marine invertebrates which includes starfishes, sea urchins, brittle stars, crinoids, and sea cucumbers. They have five-fold radial symmetry, a calcareous skeleton, and tube feet operated by fluid pressure.

10. **(c)** Natural pearls belong to Mollusca.

11. **(a)** The peculiar pungent smell of cockroach is produced by the secretions of pheromones.

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13. **(c)** The visible appearance of growths of bacteria seen on laboratory culture media are called colonies.

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28. **(b)** Solute potential

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38. **(b)** When the phloem and cambium are present on both sides of xylem, the vascular bundle is called bicollateral.

39. **(b)** The citric acid cycle (also called as *Krebs cycle* or tricarboxylic acid cycle) takes place in the mitochondria and is an integral part for the generation of adenosine.

40. **(b)** Krebs cycle

41. **(c)** A clot of blood contains fibrin.

42. **(b)** An anticoagulant used for preventing clotting *in vitro* is sodium oxalate. It prevents clot formation by combining with cations in the blood.

43. **(b)** Ca^{++} metallic ions is essential for blood clotting.

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