KANHA MAKHAN PUBLIC SCHOOL
Annual Exam Important Questions (2019-20)
Class – XI (BIOLOGY)

(A)

1. What are the functions of liver?
2. What would happen if HCl were not secreted in the stomach?
3. How do chylomicrons differ from micelles?
4. Diffusion of gases occurs in the alveolar region only and not in the other parts of the respiratory system. Why?
5. Differentiate between IRV and ERV.
6. Differentiate between inspiratory capacity and expiratory capacity.
7. Differentiate between vital capacity and total lung capacity.
8. What is vital capacity? What is its significance?
9. What is the effect of PCO_2 on oxygen transport?
10. Define oxygen dissociation curve. Can you suggest any reason for its sigmoidal pattern?
11. What is the difference between lymph and blood?
12. Differentiate between open and closed system of circulation.
13. What is the significance of atrio-ventricular node and atrio-ventricular bundle in the functioning of heart?
14. Write the differences between Systole and Diastole.
15. How do you distinguish between a skeletal muscle and visceral muscles.
16. Draw the diagram of pectoral girdle and label the constituent bones.
17. Find out what the terms ‘algal bloom’ and ‘red tides’ do signify.
18. What are the characteristic features of Euglenoids?
19. Differentiate between homosporous and heterosporous pteridophytes.
20. Differentiate between the gametophyte of bryophytes and that pteridophytes.
21. Differentiate between dicot stem and dicot root on the basis of their vascular bundles.
22. What are bulliform cells? What is their function?
23. Differentiate between primary growth and secondary growth.
24. Differentiate between spring wood and autumn wood.
25. Bring out the differences between fascicular cambium and phellogen.
26. Distinguish between heart wood and sap wood.
27. Differentiate between loose connective tissue and dense connective tissue.
28. Distinguish between dense regular and dense irregular connective tissue.
29. Discuss how classification systems have undergone several changes over a period of time?
30. Describe the three groups of Archaebacteria.
31. Describe the three common steps in the sexual reproduction of fungi.
32. Differentiate between the gametophyte and sporophyte of plants. What is meant by alternation of generations?
33. Draw a well-labelled diagram of a bacteriophage.
34. What is alternation of generations? Describe how Bryophytes exhibit this phenomenon in their life cycle.
35. What is heterospory? Briefly comment on its significance. Give two examples of heterosporous plants.
36. What name is given to the fully developed female gametophyte of an angiosperm? Draw a neat diagram of it and label four parts in it.
37. Name the types of fertilization, that is unique to angiosperms. Describe it.
38. Write an account on the symmetry of animals.
39. Write four differences between the animals of Platyhelminthes and those of Aschelminthes. Give an example of each.
40. Bring out five differences between Annelida and Arthopoda. Name the blood-sucking ectoparasite of Annelida.
41. How are the animals of Arthoropoda different from those of Mollusca? Give six points.
42. Differentiate between the animals of Chondrichthyes and Osterichthyes. Give six points.
43. a) Draw a labeled diagram of the basic body plan of chordates.
    b) Mention the four characteristic features which all chordates possess.
44. Define the term inflorescence. Explain the basis for the different types of inflorescence in flowing plants.
45. Describe the modification of stem with suitable examples.

46. Describe the arrangement of floral members with relation to the thalamus.
47. Describe the various types of placentation found in flowering plants.
48. Draw the floral diagram of Liliaceae or solanaceae and write its floral formula. Write two major differences between the flowers of this family and those of papilioneceae.
49. Draw a diagram of the transverse section of a dicot root or dicot steam and label six parts in it.
50. Answer the following with reference to the anatomy of dicot root:
    a) Where is pericycle located?
    b) How are xylem vessels arranged?
    c) What do you call such an arrangement?
    d) Which type of cells constitutes the cortex?
51. What is periderm? How does periderm formation take place in dicot stems?
52. Cork cambium forms tissues that form the cork. Do you agree with this statement? Explain.
53. Differentiate between the abdomen of a male cockroach and that of a female cockroach.
54. Draw a labeled diagram of the reproductive system of a cockroach male/female.
55. Name the different types of teeth and their respective number in an adult human.
56. Describe the process of digestion of proteins/starch/lipids in human.
57. Example how the thoracic chamber is a closed chamber. Why is such a set up necessary?
58. Explain the process of inspiration under normal conditions.
59. An Rh-negative woman is carrying an Rh-positive foetus for the second time. Describe the consequences of Rh-incompatibility in this case?
60. What is systemic/pulmonary circulation? Describe its importance
61. Represent diagrammatically a sarcomere and label its parts. Which of these parts shorten during muscle contraction?
62. State the location and function of different types of meristems.
63. What is stomatal apparatus? Explain the structure of stomata with a labeled diagram.
64. Describe the internal structure of a dorsiventral leaf with the help of labeled diagram.
65. Explain the process of secondary growth in the stems of woody angiousperms with the help of schematic diagrams. What is its significance?
66. Describe the histology of human alimentary canal.
67. Discuss the main steps in the digestion of proteins as the food passes through the alimentary canal of human beings.
68. How are polysaccharides and disaccharides digested?
69. How does the butter in your food get digested and absorbed in the body?
70. Describe the role of hemoglobin in the transport of respiratory gases.
71. Represent diagrammatically the exchange of gases at (a) the alveoli and (b) the body tissue with blood and the transport of respiratory gases.
72. How is respiration regulated?
73. What is meant by double circulation? What is its significance?
74. Describe the evolutionary changes in the pattern of heart among the vertebrates.
75. Draw a standard ECG and explain the different segments in it.
76. Describe the various kinds of skeletal joints in human body, according to their mobility, giving one example of each.
77. Describe the process of muscle contractions.
78. Describe the various steps of cardiac cycle.
79. Describe the process of transport of CO_2 / O_2.

OR

Structure of human heart with the help of a labeled diagram.

(B)

1. An onion root tip has 16 chromosomes in each cell. Write how many chromosomes will the cell have at G_1- phase, after S- phase and after M – phase.
2. Why are nuclear pores present on the nuclear membrane of the nucleus in a cell?
3. 'Photosynthesis is essential for sustaining life on the earth'. Justify the statement with at least two reasons in support.
4. List any three differences between anaphase of mitosis and anaphase-I of meiosis.
5. (a) Give an account of the body cavity/germ layers found in sponges with its function.
   (b) Describe some general features of cartilaginous fishes.
6. Apart from being a plant hormone having physiological role, gibberellins are also used in agriculture to increase the yield. What role do these hormones play when applied externally in crop fields?
7. (a) Define nerve impulse and explain the factors on which it depends.
   (b) Give difference between actin and myosin filaments.
8. Mention two important functions of each of the given elements along with their deficiency symptoms.
   (a) P (b) Fe (c) Zn
9. With the help of a neatly labeled diagram, explain the structure of adipose tissue.
10. The spread of living pteridophytes is limited and restricted to narrow geographical regions. Give reasons
11. Define turgor pressure. State some advantages of turgor pressure which makes it useful to the green plants.

OR

Explain giving reasons, why the rate of transpiration is more on sunny and windy day as compared to calm and cool day, even when they are appropriately watered.

12. Explain the concept of activation energy with the help of a graph.
13. What is the role played by renin-angiotensin in the regulation of functioning of kidney?
14. Give a diagrammatic representation of Krebs' cycle.
15. Describe the C_3 cycle of carbon fixation in plants.

OR

Describe the various types of simple epithelial tissues in animals, with the help of a labelled diagram.

16. The cell cycle comprises of a long interphase and a short dividing phase. What is the significance of G_0 –phase in cell cycle?
17. What are companion cells? Why do they usually exist in association with sieve tube elements?
18. In a cell, why does the Golgi apparatus remain in close association with the endoplasmic reticulum?

OR

Identify the biomolecules from the following statement and draw their structures.

(a) Biomolecule which is found only in RNA in place of thymine.
(b) Biomolecule also known as trihydroxy propane.

19. Write down the major characteristics of family-Solanaceae/liliaceae.
20. (a) What are fatty acids? Give two examples.
    (b) Differentiate between saturated and unsaturated fatty acids.
21. Deciduous plants shed their leaves during hot summer or in autumn. This process of shedding of leaves is called abscission. Apart from physiological changes, what anatomical mechanism is involved in the abscission of leave?
22. Both Iysosomes and vacuoles are a part of endomembrane structures, yet they differ in their functions. Comment.
23. What is photoperiodism? Why is it said that defoliated plant does not respond to photoperiodic cycle?
24. Plant Growth Regulations (PGR) known for their various physiological functions may act synergistically or antagonistically. Give three reasons in support of this statement.
25. Terrestrial animals are generally either ureotelic or uricotelic ammonotelic. Why?
26. Proteins have primary structure. If you are given a method to know which amino acid is at either of the two termini (ends) of a protein, can you connect this information to purity or homogeneity of a protein?
27. Give the essential features of meiotic type of cell division.
28. How do ears help us in maintaining equilibrium?

29. Give a comparative account of ribosomes of prokaryotic and eukaryotic cells. Enumerate both the similarities and dissimilarities among them.
30. Give reason:
    (a) Palm is a monocotyledonous plant, yet it increases in girth.
    (b) Both carrot and ginger grow underground, but are still different from each other.
31. Enlist three factors that regulate glomerular filtration rate.
32. What are the assumptions made during the calculation of net gain of ATP during aerobic respiration? Also, write whether these assumptions are valid or not.
33. Differentiate between red and white muscle fibres.
34. Give an account of stages of meiosis-I.
35. Give an account of types of meristematic tissue found in plants.
36. Illustrate a glycosidic, peptide and a phosphodiester bond.
37. Give the three metabolic products of pyruvic acid and state where are they formed.
38. Differentiate between cyclic and non-cyclic photophosphorylation.
39. Describe the types of flowers, classified on the basis of relative positions of floral organs or parts on thalamus with the help of diagram.
40. Give characteristics features of phylum-Hemichordata.
41. 'We still grow crops on land inspite of developing a successful technique of growing plants without soil'. Justify the statement by explaining the technique mentioned.

    OR

    Respiratory pathway is believed to be a catabolic pathway. However, nature of TCA cycle is amphibolic. Explain.
42. Describe briefly various structural forms of lipid with a few examples.

    OR

    Describe the famous Watson and Crick model of DNA.
43. Why are blood, bone and cartilage called specialized connective tissues?
44. Discuss briefly the significance of photosynthesis.
45. Enlist and describe any three disorders of respiratory system
46. Explain the mechanism by which regulation of respiration takes place in humans.
47. Differentiate between
    (a) Respiration and combustion
    (b) Glycolysis and Krebs' cycle
    (c) Aerobic respiration and fermentation

    OR

    What is root pressure? Demonstrate root pressure by planning an experiment.
48. Explain regulation of kidney function.
49. Disorders of the excretory system.
50. Explain Muscle contraction.
51. Explain Structure and function of Neuron
52. Explain Transmission of Impulse.
53. Reflex action and Reflex Arc.
54. Mechanism of Vision.
55. Mechanism of Hearing.
56. List of hormones released by Testis and Ovary and their function.
57. Briefly describe water potential. What are the factors affecting it.
58. Explain why xylem transport in unidirectional and phloem transport bi-directional.
59. Differentiate between Diffusion and osmosis
60. Differentiate between Apoplast and symplast pathways of movement of water in plants.
61. What is light reactions.
62. factors affecting photosynthesis.
63. Define RQ. What is its value for fats.
64. What is the significance of step-wise release of energy in respiration.
65. Distinguish between Glycolysis and Citric acid cycle.
66. Explain Amphibolic pathways.

67. Explain the factors affecting photosynthesis.
68. Give comparison between the following:
    (a) C_3 and C_4 pathways
    (b) Cyclic and non-cyclic photophosphorylation
    (c) Anatomy of leaf in C_3 and C_4 plants

(ALL NCERT EXERCISE QUESTIONS ARE IMPORTANT)