

SHARDAYATAN SCIENCE SCHOOL

STANDARD- 12 BIOLOGY

3MARKS QUESTION

- 1) Write a short note on Diffusion.
- 2) What is active transport? Describe the role of protein in active transport.
- 3) Compare the different transport processes.
- 4) Briefly describe water potential. What are the factors affecting it?
- 5) Describe the thistle funnel experiment of osmosis.

Or

What is osmosis? Describe the physical experiment showing the process of osmosis.

- 6) Explain the kinds of solutions based on their relative concentrations.
- 7) What is plasmolysis?
- 8) Describe Imbibitions.
- 9) How do plants absorb water?
- 10) Write the difference between apoplast and symplast pathways.
- 11) How is the mycorrhizal association helpful in absorption of water and minerals in plants?
- 12) Discuss transpiration pull model of water transport in plants.
- 13) Discuss the factors responsible for ascent of xylem sap in plants.
- 14) Explain the mechanism of opening and closing of stomata.
- 15) What is mass flow hypothesis.?
- 16) Write the difference between osmosis and diffusion .
- 17) What is excretion? Which type of excretory products are produce by living organisms?

- 18) How are animals are classified by types of nitrogenous waste?
- 19) Terrestrial animals are generally ureotelic or uricotelic but not ammonotelic, why?
- 20) Sketch and label the ultrastructure of nephron.
- 21) With help of diagram describe the internal structure of kidney.
- 22) Explain the mechanism of urine formation in human kidney.
- 23) Describe different types of nephron.
- 24) Sketch and label only excretory system in man.
- 25) How is urea formed in the animal body?
- 26) How does urine formation help in maintaining the correct composition of blood?
- 27) Suppose the kidneys of a person are damaged, can you predict what is going to happen to him?
- 28) How does skin, lungs and liver help in the process of excretion?
- 29) Write a note on hemodialyzer.
- 30) Explain the process of micturition.
- 31) Describe the role of JGA in kidney function.
- 32) Give a brief account of the counter current mechanism.
- 33) Describe mechanisms of concentrations of the filtrate.
- 34) Describe the roles of tubules in formation of urine.
- 35) Explain the species diversity given by R.H. Whittaker.
- 36) Write short note on ecosystem biodiversity.
- 37) Describe the latitudinal gradients of biodiversity.
- 38) What are the reasons for greater biodiversity in tropics?
- 39) Describe importance of biodiversity.

40) Write short note on “Biodiversity at National level”.

Or

Describe biodiversity of India.

41) Write a short note on Biodiversity at world level.

42) Mention the types of biodiversity seen in Gujarat.

43) Describe any three causes of biodiversity loss.

44) Write a note on in-situ conservation of biodiversity.

45) Write a note on Zones of biosphere reserves.

46) Describe ex-situ conservation of biodiversity.

47) Write a short note on Gene bank.

48) Explain how biodiversity important for human.

49) What are sacred groves? Where are they found in India? Explain their importance in conversation.

50) How can you as an individual, prevent loss of biodiversity?

51) What is nerve impulse? How it can be conducted through nervefiber?

52) On the basis of axon and dendrites, classify the types of neuron.

53) Sketch and label the nerve cells.

54) Explain the process of transmission of Impulse at synapse.

55) Describe the structure of forebrain of human.

56) Sketch and label the schematic representation of the ventricles of Human brain.

57) Write a brief note on synapse.

58) Explain the central nervous system and their parts.

59) Describe reflex action.

60) Draw and label the structure of human eye.

- 61) Briefly explain the mechanism of vision.
- 62) Describe the mechanism of hearing.
- 63) Sketch and label the internal ear of human.
- 64) Write the difference between parasympathetic and sympathetic system.
- 65) Write a short note on Autonomous nervous system.
- 66) What is cranial nerves? Briefly explain it.
- 67) Sketch and label the L.S. of flower.
- 68) Describe the anther and its internal structure.
- 69) Make a note on development of male gametophyte.
- 70) Briefly explain the process of megasparogenesis.
- 71) Write a note on pollen grain, its formation and structure.
- 72) What is pollination? Explain the kinds of pollination.
- 73) What are adaptations contrivances for self pollination.
- 74) Describe pollination by water.
- 75) What do you understand by Outbreeding devices?
- 76) Explain the Pollen-Pistil Interaction.
- 77) What is artificial hybridization?
- 78) What do you mean by double fertilization in plants?
- 79) Briefly explain the post-fertilization events in plants.
- 80) Explain the Capsella type of Embryo development with help of diagram.
- 81) What is apomixis? Explain it briefly.
- 82) What do you understand by polyembryony?
- 83) Draw and label the monocot seed.
- 84) Describe the formation of fruit.

- 85) Genetic material is DNA and not protein. How did Griffith prove this experiment?
- 86) Explain Transduction/ Hershey and chase experiment / Blending experiment.
- 87) How the DNA become packaged in chromosome?
- 88) Sketch and explain the double helical DNA molecule.
- 89) Compare the properties of DNA versus RNA.
- 90) Discuss the mechanism of DNA replication.
- 91) Explain briefly the process of Transcription.
- 92) Write the main properties of genetic code.
- 93) Explain briefly the steps of protein synthesis.
- 94) How is gene expressed in prokaryotes?
- 95) Explain the operon concept.
- 96) What is Human Genome Project? Write its goals.
- 97) Write the application of Human Genome Project.
- 98) What is DNA fingerprinting? How it is useful to mankind?
- 99) Write the steps of DNA finger printing process.
- 100) What are the salient features of human genome?