

Biology Sample Papers for Class 9 West Bengal Board

General Instructions to be followed by the students are:

- (a)** This sample paper has three Sections in total.
- (b)** Section-I has 1-10 questions are of 2 marks each.
- (c)** Section-II has 11-20 questions are of 4 marks each.
- (d)** Section-III has 21-23 questions are of 10 marks each.
- (e)** All questions are compulsory.

Section- I (Very Short answer type questions)

[2 Marks Each]

Q1. Which of the following organelles is associated with photosynthesis?

- a) Chloroplasts
- b) golgi bodies
- c) mitochondria
- d) centrosome

Ans: c) mitochondria.

Q2: Which compartment of human heart receives oxygenated blood?

- a) Left Auricle.
- b) Right Auricle
- c) Left Ventricle
- d) Right Ventricle

Ans. a) Left Auricle.

Q3: Which one of the following is a source of Vitamin C?

- a) Carrot
- b) Yeast
- c) egg-yolk
- d) Citrus Fruits

Ans: d) Citrus Fruits.

Q4. The percentage of Oxygen in the atmosphere is

- a) 20.68%
- b) 0.03%

- c) 77.17%
- d) 0.80%

Ans: a) 20.68%

Q5. Locomotive structure of amoeba is?

- a) Cilia
- b) pseudopodia
- c) flagella
- d) seta

Ans: b) pseudopodia.

Q6. Define Lymph?

Ans: Lymph: - The pale yellowish, transparent fluid found in the lymphatic vessels is known as lymph. It is derived from the plasma and resembles it closely in composition.

Q7. Give the major functions of the Endoplasmic reticulum cell organelles-

Ans: Endoplasmic reticulum cell organelles perform the function Syntheser of proteins as it has ribosomes attached to it

Q8. Give one advantage of multicellularity over unicellularity?

Ans: Division of labor is one of the major advantage of multicellularity over unicellularity.

Q9. When a cell placed in a solution and it swells up. Name the kind of solution which is responsible for it?

Ans- The name of the solution is hypotonic solution & when water enters the cell through endosmosis, it causing the cell to swell up.

Q10. Define Respiration?

Ans: Respiration is defined as a biochemical process in which organic food molecules are oxidized within the cells with or without the participation of free molecular oxygen resulting in the release of carbon dioxide, water and energy.

Section- II (Short answer type questions)

[4 Marks Each]

Q11. What are the different types of respiration?

Ans: Types of Respiration :- There are mainly two types of respiration depending upon the nature of the substrates. If molecular or free oxygen participates in the oxidative process, the respiration is called Aerobic Respiration and the end products are mainly carbon dioxide and water. If cellular oxidation is Carried out without the participation of free or molecular oxygen, it is known as Anaerobic Respiration; end products like lactic acid, ethyl alcohol, carbon dioxide are produced. Anaerobic

Respiration carried out by micro-organism like yeast, bacteria or enzymes secreted by them, is known as fermentation.

Q12. Define Nutrition?

Ans: Nutrition is a combination of processes in which living organisms take in materials, and utilize them in all metabolic activities concerning respiration, growth and repair or replacement of old parts. Food is the most important factor of human nutrition, while minerals are most important in the nutrition of green plants.

Q13. What are the significances of Nutrition?

Ans: Significances of Nutrition :-

- a) Supply of energy released as a result of respiration.
- b) Supply of raw materials need for growth, development, repairing of old and injured part.
- c) Protection against diseases or to face unfavourable situation. The stored food in plant or animal body is used when there is shortage of food.

Q14. What are the deficiency syndromes of Magnesium?

Ans: Deficiency syndromes of Magnesium :-

- a) Convulsion hyper-excitability, nervous weakness and ultimate death.
- b) Irregular heart beat, disturbances in blood circulation.
- c) Abnormal growth of bones due to disturbances in calcium metabolism.

Q15. Write short notes on,Pyramids of Energy.

Ans: Pyramids of energy:- Diagram representing the energy contents within different trophic levels



Energy of pyramid

of a community or food chain is termed “Pyramid of Energy”. The length of the producer bar is proportional to the amount of solar energy used annually in photosynthesis. The other bar shows the rate at which energy passes along the food chain.

Q16. What are the importance of fats or lipid?

Ans: Importance of fats or lipid :-

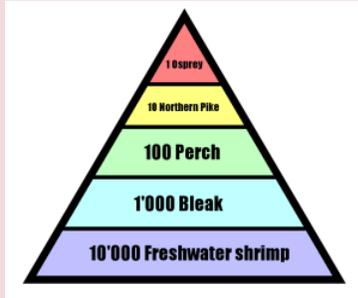
- a) Fats are important as structural components of cells, especially cell membranes. Phospholipids are important constituents of the membranes of plants and animal cells in general and of nerve cells in particular.
- b) It is an important biological fuel, yielding more than twice as much energy per gram of fat, when

oxidized completely, yields 9.3cal energy.

c) Thick layer of fat acts as a cushion and protects vital organs from shocks and injury.

Q17. Write short notes on,Pyramids of number.

Ans. i) Pyramids of number: These show the numbers of organisms at each tropic



Pyramids of number

level of a community or food chain. The length of each bar is proportional to the number of organisms. A major drawback of number pyramids is that they fail to distinguish between the size of organisms. All are equated as identical units.

Q18. What are the major components of phloem?

Ans: The major components of phloem are as follows

- a) Phloem parenchyma
- b) Phloem fibres
- c) Sieve tubes
- d) Companion cells

Q19. If apical meristem has damaged, than is the major remedy of this mishappen.

Ans: The major remedy of apical meristem damage is "Growth in length will stop".

Q20. Why is the nucleus so significant in a cell?

Ans: Nucleus has the following important functions-

- a) It controls all cell activities.
- b) It contains hereditary material that transmits hereditary information from one generation to the next.
- c) It helps in cell division.

Section- III (Long answer type questions)

[10 Marks Each]

Q22.(i) What are the differences between Respiration and Combustion?

Ans: Following table will represent the difference-

Respiration	Combustion
a) It is a biochemical process. b) It takes place in living cells only. c) Light is not formed. d) It produces energy rich ATP molecules. e) It requires low degree of temperature	a) It is a physico-chemical process. b) It takes place with any kind of combustible objects. c) Light is formed. d) It does not produce ATP. e) It requires very high degree of temperature.

(ii) What are the differences between Respiration and Breathing?

Ans: The differences between Respiration and Breathing is

Respiration	Breathing
a) It is a biochemical process. b) It is an oxidative process where energy is released. c) It consists of two phases: glycolysis and Kerbs cycle. d) Respiratory enzymes are involved in the process.	a) It is a physical process. b) It is a diffusion process where no energy is released. c) It consists of two phases inspiration and expiration. d) No enzymes are involved.

Q23. i) State the mechanism of blood clotting in brief?

Ans: Mechanism of blood clotting:

- a)** When a blood vessel is cut, the platelets disintegrate on exposure to air and release a clotting factor called thromboplastin, a lipoprotein. Thromboplastin is also produced by the damaged tissues.
- b)** Thromboplastin interacts with calcium ions and several protein factors in the blood plasma to produce prothrominase, an enzyme that catalyses the next step.
- c)** The prothrominase catalyses a reaction in which prothrombin is converted to thrombin. The reaction also requires adequate supply of vitamin K.
- d)** Finally thrombin converts fibrinogen, a plasma protein, into fibrin. Fribins from fine long threads. This Network of fibrin threads traps red cells, white cells and platelets to form a clot, and transform liquid blood into a gel. Soon the threads begin to shrink and press out of the gel, a slightly yellowish fluid called serum.

(ii) Explain the difference between plant cell and animal cells.

Plant Cell	Animal Cell
Nucleus is present at the periphery.	Nucleus is present in the centre.
They do not contain lysosomes.	They contain lysosomes.
Plant Cell has three plastids chloroplasts, chromoplasts, leucoplasts.	Animal Cell do not possess plastids
In Plant Cell centrioles are absent	In Animal Cell centrioles are present

Q23. i) What are the differences between movement and locomotion?

Ans: i) The differences between movement and locomotion-

Movement	Locomotion
In movement the organism remains fixed at a particular position and the whole organism does not change its place.	In locomotion the organism does not remain fixed at a particular position and the whole organism changes its places.
Parts of the organism do not change their places.	A part of the organism changes its places.
It is the characteristic feature of most plants exception being Volvox, Chlamydomonas.	It is the characteristic feature of most animals exception being sea anemone.

ii) What do you know about Bipedal Locomotion?

Ans: ii) Bipedal Locomotion:- Locomotion accomplished with the help of two legs is termed bipedal locomotion. It is seen in human beings. In the standing position the weight of the body is balanced over two legs. When a stride is taken by the right limb the first thing to happen is that the right heel is raised by the contraction of the calf muscle. This action serves to push the toe of the right foot against the ground and thus exerts a forward thrust. The right limb pushes further against the ground as it is pulled forward slightly bent at the knee. As this occurs the weight of body is brought over the left foot which is still in contact with the ground and acting as a prop for the rest of the body. When the right limb extends, the heel is the first part of foot to touch the ground. The weight of the body is gradually transferred from the left side to a position over the right heel, and then the body continues to move forward over the right toe, backward pressure against the substratum generally gets exerted through the right big toe.



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