Maxprap. Chapter wise Series Class 10th – Biology

Class : 10th **Topic : Life Process**

Max. Marks : 50 **Duration : 2 Hrs**

Sections: A (MCQs), B (Short Answer-I), C (Short Answer-II), D (Long Answer), E (Case-Based).

General Instructions:

(i). All questions are compulsory.

(ii). This question paper contains 23 questions divided into five Sections A, B, C, D and E. (iii). Section A comprises of 10 MCQs of 1 mark each. Section B comprises of 5 questions of 2 marks each. Section C comprises of 4 questions of 3 marks each. Section D comprises of 2 question of 5 marks each and Section E comprises of 2 Case Study Based Questions of 4 marks each.

(iv). There is no overall choice.

Section A

Questions 1 to 10 carry 1 mark each

1. The process in which transport of soluble products of photosynthesis takes place in plants is known as:

a) Translocation b) Conduction c) Transpiration d) Evaporation

2. Oxygen liberated during photosynthesis comes from

a) Glucose b) Chlorophyll c) Water d) Carbon dioxide

3. A well - stained leaf peel mount when observing under the high power of a microscope shows nuclei in

a) only guard cells b) only epidermal cells

c) guard cells, epidermal cells and stoma d) guard cells and epidermal cells

4. Name the blood vessel which carries deoxygenated blood from the heart to the lungs.

a) Aorta b) Pulmonary vein c) Capillaries d) Pulmonary artery

5. Why is some KOH placed in a small test tube in the flask with germinating seeds in the experiment to demonstrate occurrence of respiration in germinating seeds?

a) To provide oxygen required by the seeds for respiration.

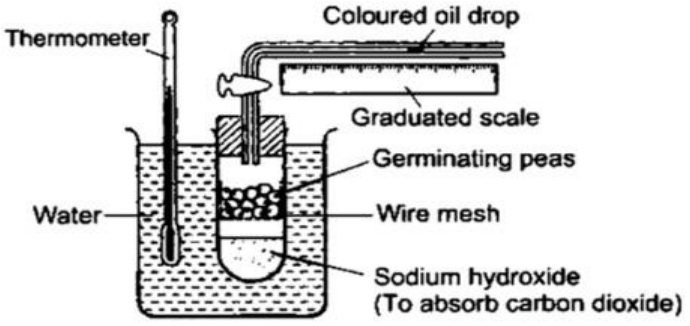
b) To absorb carbon dioxide and create partial vacuum in the flask.

c) To absorb water from the seeds to make them dry.

d) To make the pair present in the flask alkaline.

6. Study the given experimental set - up.

By measuring the movement of the oil drop in the apparatus, what can be investigated?



a) Carbon dioxide is released during germination b) Water is produced during germination
c) Heat is released during germination d) Oxygen is used during germination

7. In which kind of respiration more energy is released?
a) Photorespiration b) Anaerobic respiration c) Aerobic respiration d) All of these

8. A student puts germinating seeds into the conical flask and miss to put KOH solution in hanging test tube what he observes
a) Water level will decrease in bent tube
b) Water level will not rise in bent tube and CO_2 will not be absorbed
c) Water level will not rise in bent tube d) CO_2 will not be absorbed

Assertion(A)/Reason(R) Based (9-10): In the following questions, a statement of assertion (A) is followed by a statement of Reason (R). Choose the correct answer out of the following choices.
a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

9. Assertion (A): Photosynthesis is an anabolic process.
Reason (R): The process of photosynthesis occurs in chlorophyll.

10. Assertion (A): In anaerobic respiration, one of the end product is alcohol.
Reason (R): There is an incomplete breakdown of glucose.

SECTION – B

Questions 11 to 15 carry 2 marks each

11. What will happen if mucus is not secreted by the gastric glands?

12. Two green plants are kept separately in oxygen free containers, one in the dark and the other in contiguous light. Which one will live longer? Give reasons.

13. Differentiate between Pulmonary artery and Pulmonary veins.

14. Mention two ways in which the roots hairs are suited for absorption of water from soil.

15.What are the various processes that take place in the duodenum?

SECTION – C

Questions 16 to 19 carry 3 marks each

16. A figure given below shows a diagram of a kidney and its associated structures. The table list the percentage of certain components found within the structures A and B.

In Structure A	
Components	**Concentration %**
Urea	0.03
Glucose	0.10
Amino acids	0.05
Salts	0.75
Proteins	8.00

In Structure B	
Components	**Concentration %**
Urea	2.00
Glucose	0.00
Amino acids	0.00
Salts	1.50
Proteins	0.00

a) Using only the information given in the tables, deduce the functions of the kidney.
b) Explain how the proportions of components present in part B would change if a person is suffering from diabetes mellitus.

17. How to destarch the leaves for an experiment to show that sunlight is necessary for photosynthesis?

18. If a plant is releasing carbon dioxide and taking in oxygen during the day, does it mean that there is no photosynthesis occurring? Justify your Answer.

19. A portion of destarched leaf of a potted plant was covered with a black strip of paper. The plant was exposed to sunlight for six hours and then tested for starch. What will be the observation?

SECTION – D

Questions 20 to 21 carry 5 marks each

20. Describe the excretory system in human beings.

21. Following Questions are -
a) How do leaves of plants help in excretion? Explain briefly.
b) Describe the structure and function of a nephron.

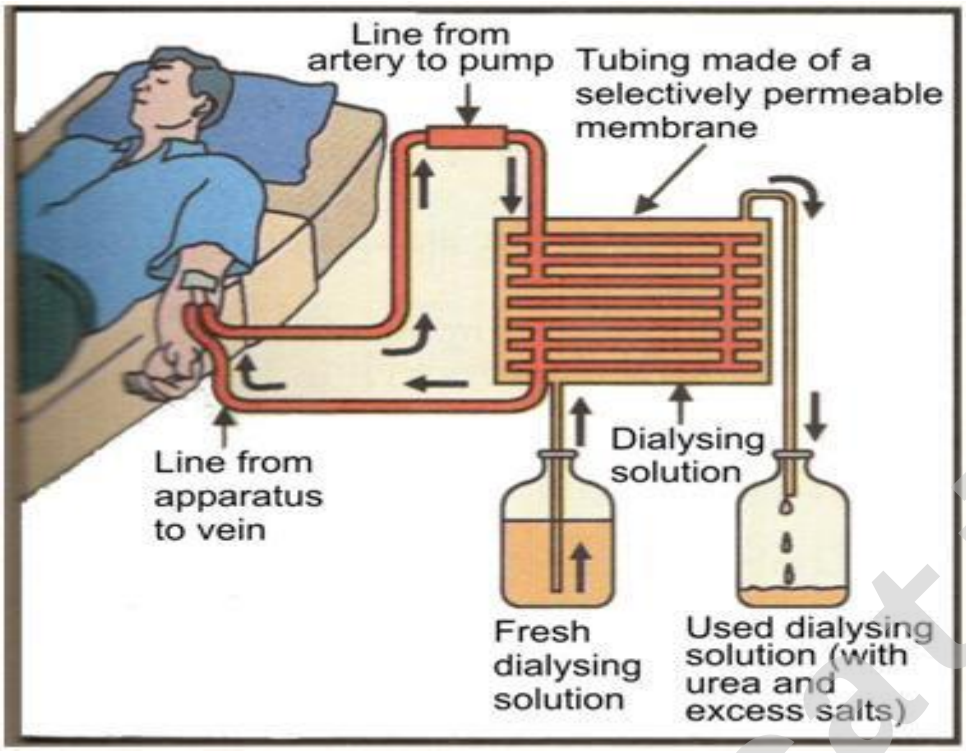
SECTION – E (Case Study Based Questions)

Questions 22 & 23 carry 4 marks each

22. Read the following text carefully and answer the questions that follow:

Kidneys are vital organs for survival. Several factors like infections, injury or restricted blood flow to kidneys reduce the activity of kidneys. This leads to accumulation of poisonous wastes in the body, which can even lead to death. In case of kidney failure, an artificial kidney can be used. An artificial kidney is a device to remove waste products from the blood through dialysis.

a)
I. Name the artery that brings oxygenated blood to the kidney.
II. Name the cluster the thin - walled blood capillaries present in the Bowman's capsule. (1)



b) In human excretory system name the organ which stores urine. Is this organ under hormonal control or nervous control? (1)

c) List two major steps involved in the formation of urine and state in brief their functions. (2)

OR

In which part of the nephron does selective reabsorption take place? List the factors which the amount of water reabsorbed depends on. (2)

23. Read the following text carefully and answer the questions that follow:

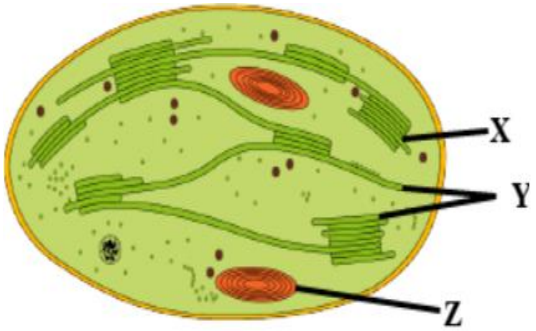
The green plants make their food, through photosynthesis and are therefore called autotrophs. All other organisms depend upon green plants for food and are referred to as heterotrophs. Green plants carry out photosynthesis by using light energy of sun. The first phase of reactions are directly light driven therefore called light reactions. The second phase of reactions are not directly light driven but are dependent on the products of light reactions and are called dark reactions.

a) What is produced during the light phase of photosynthesis? (1)

b) How many sugar molecules are produced in the overall process of photosynthesis?(1)

c) A plant is provided with ideal conditions for photosynthesis and supplied with isotope $^{14}CO_2$. When the products of the process are analysed carefully, what would be the nature of products? (2)

OR



What are the accurate functions corresponding to parts X, Y, and Z as depicted in the provided diagrammatic representation of an electron micrograph of a section of a chloroplast? (2)

Life Process Paper Details – Analysis		
Objective Questions		
MCQ	1 marks x 8 question = 8	
Assertion Reason	1 marks x 2 question = 2	
Subjective		
Short type I	2 marks x 5 question = 10	
Short type II	3 marks x 4 question = 12	
Long Type	5 marks x 2 question = 10	
Case Studies Based		
Case 1	4 marks	
Case 2	4 marks	

Total = 50 marks Your Score =