



GRADE: X Date: 29/7/2024	Monthly Test 2 (2024-25)  SCIENCE	Marks: 20 Time: 50min
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General Instructions:

1. There are 9 questions in the question paper.
2. All questions are compulsory.
3. Draw diagrams, wherever necessary.

Q.No.	Questions	Mark
SECTION A		
1	1 m	1
2	The breakdown of pyruvate to give carbon dioxide, water and energy takes place in (b) mitochondria	1
3	The process through which the roots of plants absorb water from the soil is -  b) Osmosis	1
SECTION B		
4	Refer page 174	2
5	a) Baking soda is prepared by mixing $\text{CO}_2$ , $\text{NH}_3$ , $\text{H}_2\text{O}$ and $\text{NaCl}$ $\text{NH}_3 + \text{CO}_2 + \text{NaCl} + \text{H}_2\text{O} \rightarrow \text{NaHCO}_3$ b) Phenolphthalein – colour changes to colourless to pink methyl orange – orange to yellow	2
6	a) acid should be added to water because dilution is an exothermic process and heat liberated will cause boiling and splashing b) $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ or $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$	2
SECTION C		
7	$U = -50 \text{ cm}$ $f = 30 \text{ CM}$	3

	$1/v - 1/u = 1/f$ $1/v = 1/30 - 1/50$ $= 5 - 3/150$ $= 2/150$ $v = 75 \text{ cm}$ <p>Refer page 180 - fig (d)</p>					
8	<p>Calcium hydroxide is used for white washing. When treated with CO<sub>2</sub> it forms calcium carbonate. When more CO<sub>2</sub> is passed it changes to sodium hydrogen carbonate</p> $\text{Ca(OH)}_2 + \text{CO}_2 \rightarrow \text{CaCO}_3$ $\text{CaCO}_3 + \text{CO}_2 + \text{H}_2\text{O} \rightarrow 2 \text{Ca(HCO}_3)_2$	3				
SECTION D						
9	<p>a) Compare the functioning of alveoli in the lungs and nephrons in the kidneys with respect to their structure and functioning.</p> <p>b) How are the lungs designed in human beings to maximize the area for exchange of gases?</p> <p>b) The lungs are divided into bronchi, and the bronchi are divided into bronchioles. The alveoli are small, round, or balloon-like structures at the ends of the bronchioles that increase surface area and maximize gas exchange in the lungs</p> <p>a)</p> <p>Alveoli:</p> <ol style="list-style-type: none"> <li>1. They are present in the lungs and are the main respiratory structures.</li> <li>2. They are the structural and functional units of the lungs.</li> </ol> <p>Nephron:</p> <ol style="list-style-type: none"> <li>1. It is present in the kidney helping in the excretion of urine.</li> <li>2. They are the structural and functional units of the kidney.</li> </ol> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center; width: 50%;">Alveoli</td> <td style="text-align: center; width: 50%;">Nephron</td> </tr> <tr> <td style="vertical-align: top;">1) They are tiny air sac-like structures present at the end of bronchioles present inside the lungs.</td> <td style="vertical-align: top;">1) They are tube-like structures present inside the kidney.</td> </tr> </table>	Alveoli	Nephron	1) They are tiny air sac-like structures present at the end of bronchioles present inside the lungs.	1) They are tube-like structures present inside the kidney.	5
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3) They are one cell thick and made up of an extensive network of blood capillaries.

4) Around 480 million alveoli are found in each lung.

5) Alveoli are the site of gaseous exchange.

6) The exchange of oxygen and carbon dioxide takes place between the blood of capillaries and the gases present in the alveoli.

3) They are surrounded by blood vessels as well as made up of blood vessels

4) Around 1.5 million nephrons are present in the kidney.

5) The nephron is the primary filtration unit of the kidney.

6) The function of the nephron is ultrafiltration, selective reabsorption, and tubular secretion.



CLASS X SCIENCE

MONTHLY TEST 2

.	CHAPTER	1 MARK No. of Ques.	2 MARKS No. of Ques.	3 MARKS No. of Ques.	5 MARKS No. of Ques.	TOTAL MARKS
1	REFRACTION	1 X 1=1	1 X 2 = 2	1 X 3 =3		6
2	ACIDS, BASES AND SALTS		2 x 2 = 4	1 x 3 = 3		7
	LIFE PROCESSES	2X1=2			1X5=5	7
	TOTAL QUESTIONS	4Q X 1 M = 4 M	1 Q X 2M = 2M	3 Q X 3 M = 9M	1Q X 5M = 5 M	9Q/ 20 M