THE VILLAGE
INTERNATIONAL SCHOOL
"We Nurture Dreams"

AIM HIGH, TOGETHER WE FLY

MT1 2024 - 2025 - Marking Scheme **Max marks: 20**
GRADE: X **SCIENCE (086)** **Time: 50 minutes**

General Instructions:

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

Qn. No		Marks allocated
	SECTION A	
1	Name the substances whose build up in the muscles during vigorous physical exercise may cause cramps? (b) Lactic acid + Energy	1
2	When an object is kept within the focus of a concave mirror, an enlarged image is formed behind the mirror. This image is (a) real and inverted (b) virtual and inverted (c) real and erect (d) virtual and erect	1
3	Which of the following reactions is an example of double displacement reaction? a) $Zn + CuSO_4$ ——> $ZnSO_4 + Cu$ b) $Na2SO_4 + BaCl_2$ ——> $BaSO_4 + 2NaCl$ c) $2AgCl$ ——> $2Ag + Cl_2$ d) $CaO + H_2O$ ——> $Ca(OH)_2$	1
4	Which is the correct sequence of body parts in the human alimentary canal?	1

	(b) Mouth → oesophagus → stomach → small intestine → large intestine	
	SECTION B	
5	A) Identify the substance that is oxidised and reduced in the following reaction. $CuO + H_2$ ----> $Cu + H_2O$ Ans. Copper (Cu) is reduced and hydrogen (H_2) is oxidised. B) Why chips manufacturers flush the bags of chips with nitrogen gas? Ans. The potato chips manufacturer uses nitrogen gas to flush the chips bags to prevent the chips from getting oxidized in the presence of oxygen from the atmosphere. When fats and oils are oxidized they become rancid and their smell and taste change.	2
	SECTION C	
6	Find the size, nature and position of the image formed when an object of size 1 cm is placed at a distance of 15 cm from a concave mirror of focal length 10 cm. Ans: Size - 2 cm Position - 30 cm in front of the mirror	3
7	Identify the type of reaction taking place in each case and write the balanced chemical equation. a) Zinc reacts with silver nitrate to produce zinc nitrate and silver. b) Potassium iodide reacts with lead nitrate to produce potassium nitrate and lead iodide. Ans. a) $Zn + 2AgNO_3$ ----> $Zn(NO_3)_2 + 2Ag$ - Displacement reaction b) $2KI + Pb(NO_3)_2$ ----> $PbI_2 + 2KNO_3$ - Double displacement reaction	3
8	1) Draw a ray diagram to show the image formation by a convex mirror when an object is placed between infinity and the pole P of the mirror. 2) Name the type of mirror used (a) in search lights and (b) as a rear-view mirror in vehicles. Ans: 1) diagram 2) a) concave mirror b) Convex mirror	3
	SECTION D	
9	a) State reasons for the following: (i) Herbivores need a longer small intestine while carnivores have shorter small intestine. (ii) The lungs are designed in human beings to maximise the area for exchange of gases. (b) The rate of breathing in aquatic organisms is much faster than that seen in terrestrial organisms.	5

	(a) (i) Herbivores need a longer small intestine than that of carnivores because their diet is mostly grass and plants, that contains more fibres and cellulose which are hard to digest. Longer small intestine also hosts many small bacteria that process and break down cellulose into glucose which is a source of energy. Carnivores diet is not rich in cellulose so, they do not need to harbour bacteria for cellulose digestion. (ii) Human lungs have a highly branched network of respiratory tubes. A primary bronchus divides into secondary bronchus, which in turn forms tertiary bronchus. Tertiary bronchus divides repeatedly into bronchioles which finally terminate into alveoli. Alveoli are small, rounded polyhedral pouches which are extremely thin- walled and possess a network of capillaries, for the exchange of gases. Due to vast surface area of alveoli, exchange of gases becomes a fast and effective process. Oxygen diffuses from alveoli into pulmonary blood capillaries and CO_2 diffuses out from capillaries into alveoli. (a) Terrestrial organisms inspire atmospheric oxygen, while aquatic organisms thrive on the dissolved oxygen present in water. Air contains about 21% of oxygen while water has less than 1% oxygen in dissolved state. Oxygen diffuses through water at a much slower rate as compared to air. A terrestrial organism has the advantage of utilising greater amount of oxygen at a faster rate with lesser effort whereas, aquatic organisms have to put more effort to obtain the same amount of oxygen, therefore breathing in aquatic organisms is much faster than the terrestrial organisms.	
THE END		