

SCIENCE PRACTICE PAPER HOTS 2025-26: Class- X

FM-16 (Total 8 Questions and each question carries 2 marks)

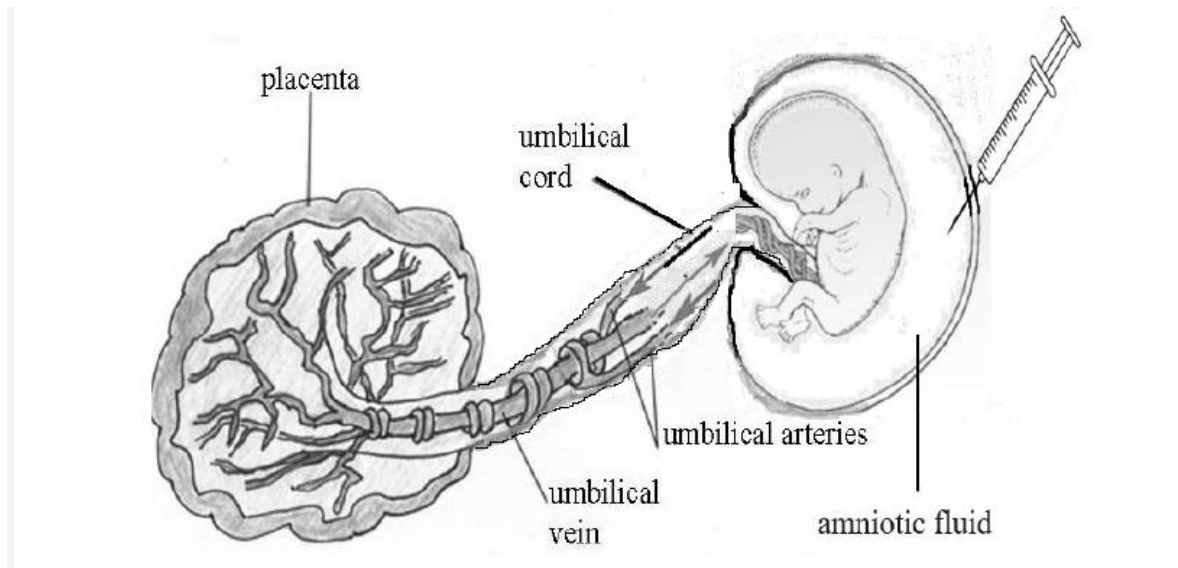
- 1) The speed of light in water is 2.25×10^8 m/s and that in glass is 2×10^8 m/s. Explain which media is optically denser.
 - 2) A person went for a medical check-up and found that the curvature of his eye lens is increasing. Name the defect he is suffering from. Mention its remedy.
 - 3) If 14 J work is done to move 5C charge between two points on a conducting wire, find the potential difference between the two points.
 - 4) 1. Thermal decomposition of---
 - a. A (Ammonium nitrate) leads to form B(laughing gas) and C
 - b. D (Lunar Caustic) leads to form Silver, Nitrogen dioxide and OxygenWrite the formula of A, B, C, D
 - 5) A metal carbonate X on heating with an acid gives a gas which when passed through a solution Y gives the carbonate back. On the other hand, a gas G that is obtained at anode during electrolysis of brine is passed on dry Y, it gives a compound Z, used for disinfecting drinking water. Identify **X, Y, G** and **Z**.
 - 6) An element A reacts with water to form a compound B which is used in white washing. The compound B on heating forms an oxide C which on treatment with water gives back B. Identify **A, B** and **C** and give the reactions involved.
- 7) a. Rahul conducted a survey of the type of ear lobes found in his classmates. He found two types of ear lobes in his classmates as per the frequency given below:

Sex	Free	Attached
Male	36	14
Female	31	19

On the basis of above data answer the following question: Which of the two characteristics - 'free ear lobe' or 'attached ear lobe' appears to be dominant in this case? Why? And is the inheritance of the free ear lobe linked with sex of the individual? Give reason for your answer.

- b. A couple has three daughters. What is the possibility of their having a boy next time- clarify.

8)



(i) Name two substance that moves through the blood vessels. (1)

(ii) Observe the picture and demonstrate what is special about the depicted vein and artery compared to generalised concept? (1)