

Explanation of My Answer :

It has not been mentioned in NCERT Text Books that Helium is highly soluble in oxygen. Rather “NCERT-XII, 2021 edition, Unit-1, Page 205, chapter The p-block elements” is explaining under the “Uses:” mentioned by NCERT as shown below where it has been mentioned that helium has very low solubility in **blood**. As there is no direct or indirect reference of the Reason R mentioned in the question in NCERT text books of 11th and 12th. The most appropriate answer according to the content available with us points to **Reason R being false statement**.

NCERT reference

Uses: Helium is a non-inflammable and light gas. Hence, it is used in filling balloons for meteorological observations. It is also used in gas-cooled nuclear reactors. Liquid helium (b.p. 4.2 K) finds use as cryogenic agent for carrying out various experiments at low temperatures. It is used to produce and sustain powerful superconducting magnets which form an essential part of modern NMR spectrometers and Magnetic Resonance Imaging (MRI) systems for clinical diagnosis. It is used as a diluent for oxygen in modern diving apparatus because of its very low solubility in blood.

Neon is used in discharge tubes and fluorescent bulbs for advertisement display purposes. Neon bulbs are used in botanical gardens and in green houses.

Argon is used mainly to provide an inert atmosphere in high temperature metallurgical processes (arc welding of metals or alloys) and for filling electric bulbs. It is also used in the laboratory for handling substances that are air-sensitive.

There are no significant uses of Xenon and Krypton. They are used in light bulbs designed for special purposes.

Intext Questions

7.32 Why is helium used in diving apparatus?

7.33 Balance the following equation: $\text{XeF}_6 + \text{H}_2\text{O} \rightarrow \text{XeO}_2\text{F}_2 + \text{HF}$

7.34 Why has it been difficult to study the chemistry of radon?