

Dosimetry: Absorbed Dose

1.

A nuclear worker's hand absorbed 20 mJ of radioactive energy. His hand has a mass of 0.3 kg. Find the absorbed dose received by the hand.



66.7 mGy

2.

A patient's lung has a mass of 1.5 kg. The lung absorbs 3 mJ of radiation energy. Find the absorbed dose received by the lung.



2 mGy

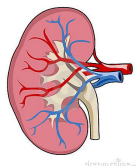
3.

A man's bladder absorbs 5 mJ of energy from radiotherapy. The mass of the bladder is 0.75 kg. Find the absorbed dose given to the bladder.

6.7 mGy

4.

A patient's kidney receives an absorbed dose of 40 mGy. Find the energy absorbed if the kidney has a mass of 0.3 kg.



12 mJ

5.

A medical technician receives an absorbed dose to his finger of 8 μ Gy. His finger has a mass 0.1 kg. Find the amount of energy absorbed by the finger.



0.8×10^{-6} J

6.

Explain using the absorbed dose equation why unborn babies in the womb are never given an X-ray.

7.

A radiologist receives an absorbed dose of 1.60×10^{-6} Gy on her hand. The energy absorbed by her hand is 1.28×10^{-6} J. Determine the mass of her hand.

0.8 kg

8.

Write down the equation to calculate the absorbed dose D when tissue of mass m kg is exposed to E joules of radiation energy.

State the unit of absorbed dose.

9.

A man's prostate of mass 0.02 kg absorbs 9 mJ of radiation energy during treatment. Calculate the absorbed dose received.

450 mGy