Radioactivity

This is the seventh text which will be used for practicing dictation and translation in the written part of the exam.

The key words are emphasized in bold

and there is a list of them in the presentation.

Radioactivity

Radioactivity is the spontaneous **disintegration** of unstable atomic nuclei and is usually accompanied by the **emission** of radiation. This may be in the form of alpha particles, beta particles or gamma rays.

Natural radioactivity (or **background radioactivity**) is the result of spontaneous disintegration of naturally occurring **radioisotopes** found in rocks and living material.

Disintegration – raspad

Nucleus – Nuclei

To accompany – pratiti

Emission – emisija, oslobađanje

To emit – emitovati, oslobađati

Background radioactivity – prirodna/pozadinska radioaktivnost

Radioisotope - radioizotop

Naturally occurring – nešto što se prirodno javlja

Radioactivity

An alpha particle is a positively-charged helium nucleus which is **ejected** from certain radioactive nuclei. It is a relatively heavy particle and alpha radiation is the least **penetrating** form. However, because it is positively charged it attracts electrons from nearby atoms. It is therefore strongly **ionizing**.

To eject – izbaciti

Penetrating – prodoran

Nearby – obližnji

Therefore - stoga

Ionizing – jonizujući

Ionization – jonizacija

Radioactivity

A beta particle is a high-energy electron emitted from certain radioactive nuclei. They are much lighter than alpha particles and are more penetrating but have less ionizing effect.

A gamma ray is an electromagnetic wave of very short **wavelength** and high frequency. It has no charge or mass and has the least ionizing effect of nuclear radiations but is the most penetrating, and potentially the most **hazardous**.

Wavelength – talasna dužina

Charge – naelektrisanje

Hazardous - opasan

Certain – određeni, neki

Radioactivity

Radioactive decay is the spontaneous disintegration of a radioactive nucleus, giving off alpha or beta particles often together with gamma rays.

The **half-life** is the time taken for half the atoms in a radioactive sample to undergo radioactive decay.

Decay – raspad

Disintegration – raspad, dezintegracija

To give off – oslobađati

Half-life – vreme poluraspada

To undergo – proći kroz, pretrpeti

Radioactivity

A **radionuclide** is a nuclide which is radioactive and decays to give off alpha particles, beta particles or a combination of these.

Detecting radiation: ionization counter, Geiger counter, cloud chamber, bubble chamber, scintillation counter, dosimeter.

Radionuclide – radionuklid

Ionization counter – jonizujući brojač

Cloud chamber – maglena komora

Bubble chamber – mehurova komora

Scintillation counter – scintilacioni brojač

Dosimeter - dozimetar

Radioactivity

The **becquerel (Bq)** is the SI unit of radioactivity. The radioactivity of a substance measured in becquerels is the number of its nuclei that decay each second.

Carbon dating – By comparing the amounts of carbon-14 in dead material with the levels of C-14 in living material, we can measure the age of the dead material.

Bq – bekerel

Carbon dating – određivanje starosti materijala uz pomoć metode ugljenika 14

Radioactivity

Irradiation (or sterilization) is the process of exposing something to radiation. It is used to kill bacteria in food and sterilize hospital equipment.

Irradiation – ozračivanje

To expose – izlagati

Hospital equipment – bolnička oprema