

Level : 2<sup>ed</sup> PYNLS  
Matter : typical correction of biophysics  
Date : 23/01/2024  
Duration: 1H 30 m

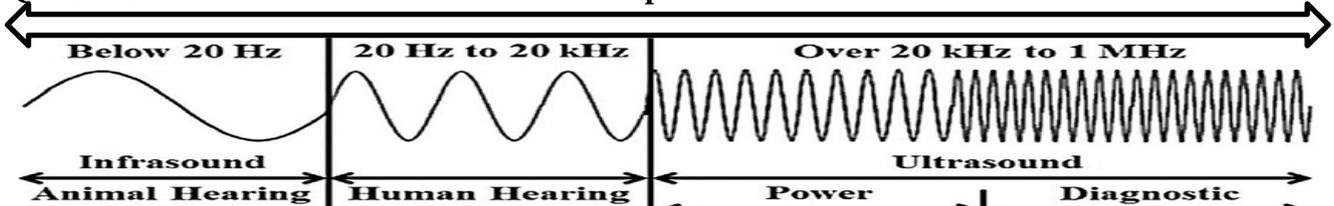
First Name :  
Last Name :  
Registration number :

### First Semester typical correction of the test (Biophysics)

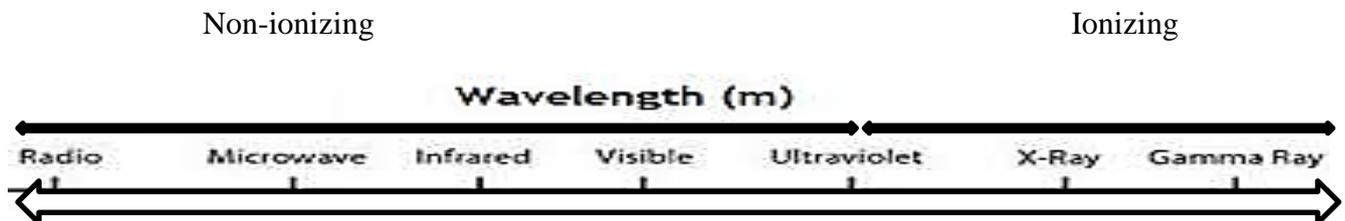
**QUESTION 1:** What is an acoustic wave? **2pts.**

Acoustic waves, or "sound waves" are a type of mechanical wave that propagates **through a medium**, typically a gas, liquid, or solid, by the successive **compression** and **rarefaction** of the medium's particles.

**QUESTION 2:** Draw the field of sound waves **3pts.**



**QUESTION 3:** Draw the global spectrum of electromagnetic waves with determination ionizing and non-ionizing radiation. **4pts.**



**QUESTION 4:** Cites four types of plan waves **2pts.**

- 1..... microwaves .....
- 2..... sound waves .....
- 3..... water waves .....
- 4..... radio waves .....

**QUESTION 5:** Cites 2 applications of X-ray imaging. **1pts.**

- 1..... Medical Use or Security .....
- 2..... Industrial Purpose or Restoration

**QUESTION 6:** Choose right answers with the symbol X. **8pts.**

X	Large wavelength increases the diffracted angle.
X	Short wavelength decreases the diffracted angle.
	Large wavelength decreases the diffracted angle.
	Short wavelength increases the diffracted angle.

X	Speed of sound increases in solid mediums
	Speed of sound increases in gas mediums.
	Speed of sound decreases in solid mediums.
X	Speed of sound decreases in gas mediums.

X	High temperature increases the speed of sound.
X	Low temperature decreases the speed of sound.
	High temperature decreases the speed of sound.
	Low temperature increases the speed of sound.

	Large wavelength increases health risks
X	Short wavelength increases health risks
X	Large wavelength decreases health risks
	Short wavelength decreases health risks

X	Non-ionizing radiation has lower energy
X	Ionizing radiation has higher energy
	Ionizing radiation has lower energy
	Non-ionizing radiation has higher energy

	X-ray radiation has longer distance
X	Microwaves radiation has longer distance
X	Gamma rays penetrate steel and plastic
	Alpha ray penetrate steel and plastic

X	Ultrasound propagate faster in water
	Ultrasound waves has longer distance in air
	Sound waves propagate in a vacuum ( Void )
X	Acoustic waves propagate faster in air

X	Wavelength of radio longer then microwaves
X	Wavelength of microwaves shorter then radio
X	Electromagnetic wave has 2 fields perpendicular
	Electromagnetic wave has 2 fields parallel