# Electromagnetic spectrum quiz answer key pdf

By the end of this section, you will be able to do the following: the explanation of the electronic spectrum, and the explanation of the frequency and frequency of the wave and the electronic sy The following criteria (7) will help the owner of science concepts to explain the differences and similarity of each part of the spectrum and the purposes of learning applications from these parts in this section. The student knows the characteristics and behavior of the waves. Student expectation: (A) check and explain the movement and the propagation of the wave in different types of media; (b) Research and analysis of the characteristics of waves, including speed, frequency, dimensions, and dimensions, and the speed of the wave, frequency, and the connection between the wave wave , (g) the transor Compare the characteristics and behaviours of these waves, including the electronic waves and the electronic spectrum, and the characteristics and a pattern of long-term waves, including sound waves , and (F) Describe the role of wave characteristics and behavior in medical and industrial applications. In addition, the high school physics laboratory manual addresses the contents in this section in the lab: light and color, as well as the following criteria: (7) Science Concepts. The student knows the characteristics and behavior of the waves. The student is expected to compare the characteristics and behaviors of (C) trans-waves, including the electronic waves and the electronic spectrum, and the characteristics and long-term waves behavior, including sound waves. (8) Science concepts. The student knows simple examples of nuclear, nuclear, and quantum demonstration. The student is expected to (B) compare and explain the various nuclear emission spectra produced by. Electric Field Electronic Radiation (EMR) Magnetic Field Maxwell Equation [BL] Explains that the term spectrum means a physical property which in some cases has a wide range of constant values and in other cases, the object is the same. Ask other examples of Spectra, for example, sound, people's heights, etc. [OL] students ask in ways that affect the earth in sunlight. Examples that do not have student names: zhea, weather, climate, weather, warming, etc. Discuss energy changes after the light that takes place after entering food chains and environmental system changes. Ask students if they can explain that the energy in fossil fuels was actually light energy. The light is called the visible light that we can see. Any misunderstandings that remove the visible light from some way to different radiations that we cannot see, except for frequency and dimension. The fact is that some radiation shows how to do with eye functions, not with radiation itself. We usually take the light for the go-go, but it's really amazing and mysterious form of energy. Think about it: travel to earth across millions of kilometers of light space. as long as It talks in different ways to support life, provide heat and generate almost all energy due to weather patterns. Light is a form of electronic radiation (EMR). The term light is usually meant by visible light, but it is not the only form of EMR. As we will see, visible light captures a narrow band in a wide range of electronic radiation types. Discuss the electric, magnetic and gravitational field of the office. The approach is how these three sectors are similar, and how they differ. Describe al-Qaeda as the victor in intensity and direction, and explain that the fields are in victor quantity. In these cases, the fields are built by forces working in one direction. Electromagnetic radiation is produced by a dynamic electric charge, that by the current of an electric. When you study electricity you will see, an electric current produces both an electric field, E, and a magnetic field, B. These fields are long for each other. When the running charge is axalatis, then as an alternative, there is an MV propaganda. The 15.2 shows how an electronic wave moves away from the source-it has been indicated . BL Wave Properties Review: Frequency, Dimension and Dimensions. Ask students to remember the sounds and water waves, and explain how they relate to these features. The official explains that a significant difference between EM waves and other waves is that they can travel in the empty space. Ask if students remember the differences between long-term and trans-waves. Give examples. Explain that waves take energy, no matter what. This video, linked below, is closely related to the following statistics. If you have questions about the features of THE VIEW, EM Spectrum, how to advertise waves, or definition any of the relevant terms, the answers in this video can be found. How are the magnetic fields, the electromagnetic field, and the direction of preaching with each other? All three are parallel to each other and are with the X axis. All three are inter-connected. The electric fields and magnetic fields are parallel to each other and are long in the direction of propagation. Magnetic fields and propagation are parallel to each other with the direction y axis and lengthen in the electric field. Directly attach this video to students as a way of attaching information to the following two statistics as well as the following table. Click to view the content Is Proof of The Propagation of the Tropical Wave. The M wave is propaganda from the tower broadcast to the left, as is the figure 15.2. You can make a wave yourself or allow to send animation. When the wave reaches the antenna on the right, it causes an aussalating present. It's how radio and television signals are transferred and received. Where do radio waves fall on the electronic spectrum? Radio waves appear to have the same dimensions. Radio falls towards higher frequency of waves Light. The short-range of light visible to the radio waves falls towards the wave. Radio waves fall towards the low frequency of visible light. Contact the discussion from the previous video, which describes the generation of an electronic wave, its migration and request for the recovery of the electronic waves. Specifically, how radio wave reception basically points to the mechanism by which the wave is produced. Also explain that these electronic waves are carrier waves on which audio or visual signals are placed – either analog or digital – so that they can be transferred to receivers within a specific range of broadcast antennas. The 15.2 is a part of the electronic wave sent out of an instant charging at once. The electric and magnetic fields (E and B) are in the stage, and they are long in the direction of each other and the propagation. For explanation, the waves are shown with only one direction, but they also advertise in other directions. From your study of sound waves, remember the characteristics that apply to all types of waves: the wave of the wave – the distance between two waves or two waves, the frequency of the distance, the frequency of the frequency, the number of waves, the number of the waves. As mentioned: The height of the point, takes several forms from the electronic radiation. These forms are characterized by a range of frequencies. Because frequency is inversely proportional to the wave, any form of EMR can also represent the dimension by its range. The 15.3 variant of the EMR shows the frequency and dimensions of the wave. How many of these types of people do you know? The 15.3-spectrum electronic spectrum, showing the main types of electronic waves. The frequency and dimension range is remarkable. The dividing line between some types is different, while other types are overlapping. Take a few minutes to study the different types of radiation positions on the m spectrum above. Sometimes the visible light is called as all radiation and ir radiation with less frequency than those of them. This includes radio waves, which exceed the frequency used for media broadcasts of TV and radio signals. You see on diagram that microwave radiation is the same radiation that is used in a microwave oven. We feel as the heat of the heat is also a form of low frequency EMR. BIM radiation is the most harmful form of spectrum at the end of the high frequency. Ask the shape of the office M.T.A. students who have heard about the radiation. They ask them to explain the types of memory radiation, and correct any misunderstandings. Ionizing discuss the difference between radiation and non-non-non-radiation radiation, and the difference between the electronic radiation and other types of radiation — alpha, beta, etc. Heat waves, a type of unvisible radiation, Not different from other EM waves. We feel them as heat because they have a frequency that interacts with our body in a way that converts M energy into thermal energy. All high frequency radiation for the right to see light is sometimes called as the upper -frequency (UV) radiation. This includes X-ray and Gamma (γ s) keran. The narrow band that appears to extend the light from low frequency red light to high frequency in the light, such conditions are and the condition (under red) and the upper-left (from the sky). Scott's physicist James Clark Maxwell (1831-K), is widely regarded for the 19th century's greatest theoretical physics. Although he died young, Maxwell not only developed a complete electronic theory, represented by Maxwell's equations, he also developed the Connecticut theory of gases, and made important partnerships to understand the nature of color and lightning. Maxwell brought all the work together which were done by brilliant physicists, such as ersted, law columb, piano, gous and faraday, and added his insight to develop the most principle of animations. Maxwell's equations are here in words because his mathematical material is beyond the level of this text. However, the equations explain that apparently simple mathematical statements can elegantly unite and express a rush of ideas-why mathematics is the language of science. Maxwell's equation is on positive allegations to electric field lines and ends on negative charges. Electric field is described as a test charge per unit, and the power of power is related to the continuous, s0. Magnetic field lines are continuous, no start or end. No magnetic monopolis is known for existence. The power of magnetic power is related to the magnetic constant, .0. An electromagnetic force (emf) and therefore, an electric field besher a converted magnetic field. The direction of the Emf is the opposite of the change, the direction of the magnetic field. Magnetic fields are created by transferring charges or changing power fields. Maxwell's complete theory shows that electric and magnetic forces are not isolated, but different phenomena of the same thing- the electronic force. This classical unity of the forces is a movement that encourages the four main forces to unite nature, gravity, electronic, strong nuclear and weak nuclear forces. Weak nuclear and nuclear forces have come together and more unity is expected with the strong nuclear forces. But the unity of the gravitational force with the other three has proved to be a real head-scratchar. Maxwell's ultimate success was his development in 1855 of a process that could produce color photography images. In 1861, he and photographer Thomas Stein worked together on this process. The color picture was obtained by the red, blue, Green light through black and white images of a tartan ribbon, each picture itself is exposed in different colors. The last picture was presented on a screen (see figure 15.4). Shape 15.4 Maxwell and a picture of a colored ribbon-satin. It was the first sustainable color picture. The Scots pants made the theme of a colorful photography. Maxwell's acceptance of the equation has encouraged the science of political and physics to consider the difference between the characteristics that they are both seen to be beautiful and an electric charge and a magnetic dipole, which give the respective fields an increase in the When scientists are looking for a new approach to developing a theory, they usually start with the simplest and most seduating explanation. An example of such a balance is that there are equal and opposite charges of electrons and proteins. You can see the balance in four statements, given above, which explain the equation. The first two statements reveal similar treatment of electrical and magnetic fields, and the last two explain how a magnetic field can create an electric field, and vice versa. From our current day perspective, we can now see the importance of Maxwell's equality. It was the first step in the struggle to unite all natural forces under a principle. After integrating power and magnetic forces as electric power, maxwell, the power of this power with weak nuclear power, and evidence that strong nuclear power can unite with the electric force. The only force that is resisting the same with others is the gravitational force. A principle that will unite all forces is often called as a great unified theory or theory of everything. The theory that is still in progress. Explain the electronic force as explained by Maxwell's equation. According to Maxwell's equation, the electronic force increases the power of electricity and magnetic power. According to Maxwell's equation, electric force and magnetic power are different manifestations of electronic power. According to Maxwell's equation, the electric force is due to the electronic power. According to Maxwell's equation, magnetic power is the cause of the electronic force. All the Waves mentioned above are basically the same form of radiation. They can travel all the space, and they can all travel at the speed of light in one space. The fundamental difference between the types of radiation is their different frequency. Each frequency has an attached dimension. As frequency increases during spectrum, the frequency decreases. Energy also increases with frequency. Because of this, high frequency drag more easily matters. Some features of different EM spectrum bands are listed in table 15.1 in use. Explain BL transparency and fog. Argue that some content are transparent for some frequency but others obscure. Ask students for content examples Some can be entered by M frequency but not by others. Ask for examples of materials that are transparent to visible light and materials that are vague for visible light. Ask the office students if a lead is kept in dental patients during dental x-rays. Explain that x-spectrums are at the end of high energy and that they are very fast. They are just locked by very dense materials, such as lead. Al-Qaeda ask if the student can explain the earth's greenhouse effect in terms of the rapid power of the different frequency of EM radiation. Explain that the atmosphere is more transparent to visible light than heat waves. Visible light is entering the atmosphere and warm ground surface. Hot surface spreads heat waves, which are partially trapped by certain gases in the atmosphere. EM Waves Production Applications Types Of Life Science Aspects Radio and TV Speed Inger Charges Communication, Remote Control MRI Needs Control For Band Use Microwave SpeedIng Charges &amp; Thermal movement communication, microwave oven, radar deep thermal cell phone usage and thermal movement &amp; electronic transthermal imaging, heat emotion by the environment green light &amp; electronic transmission, affects the sales To reduce abnormal growth, vitamin D production stops, cell damage X-rays internal electronic transmission &amp; Fast-colmedic, safety medical diagnosis, cancer therapy causes cell damage, which results in security medical diagnosis, cancer therapy causes cell damage, radiation loss table 15.1 electronic waves Health problems associated with it. The narrow band of visible light is a collection of dark colors. The section of m spectrum in The Chtra 15.5 shows which includes prominent light. These dimensions are frequency 4.0 × s 10 s 14 s s 1 4.0 × 10 14 s s 1 red end 7.9 × 10 14 s s 1 7.9 × s 10 s s s s 1 s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s s It's a very tight range, considering that the intensity of the M spectrum is about 20 commands. Shape 15.5 is a small part of the electronic spectrum which contains its visible components. The divide between the eye and the upper part is not quite clear, nor the seven rainbow colors divided between [BL] to review the primary and secondary colors of the sun. Note that this is a sobrectato-color combination. Explain the difference between the office sobrectatoi and the additional color differences. The color on the sobrectatoi color wheel is made by the sun that all colors are made by the spirit but one. So, when these colors are all overlapping, the light is emotional and the result is black. Whitelight is a collection of all colors, so when all colors are added together Color wheel, the result is white. Explain that the lajordi is a blue shade and that the dark is the shadow of red. The visible light is often given to the nm meter. For example, the yellow light is a dimension of about 600 nm, or 6 × 10 s 7 s × 6 s 7 s 7 m. As a child, you probably learned the color wheel, the figure is shown on the left in 15.6. If you combine different colors of paint together then it helps you know that the results of the color. Two of the primary versions of colors are intertwined - color, yellow, or lajordi - results in a secondary color with each other. For example, the combination is green and yellow. It is called sobtrektove colour. The different colors of light combined together is very different. Diagram on the right shows the additional color mixture. In this case, the primary colors are red, green, and blue, and secondary colors are red, purple, and yellow. The contrast pigments and the contrast light are different because the material is light-stimulated by a different set of laws than the visualization of light by the eye. Note that when all colors are removed, the result is no colour or black. When all colors are added, the result is white light. When an interior appears in the sky when the white sunlight is separated into a spectrum visible by a prism or by rain drop when we see its reverse look. The figure s15.6 follows the color pigments sobtrektov color wheel, and the additional color for the color light combination. Click to view the content this video is proof of additional color and color filters. Try all settings except the fitness. Explain why the blue bulb passes through only the light blue filter. A blue filter stimulates the blue light. A blue filter reflects the blue light. In addition to the blue light a blue filter absorbs all visible light. A blue filter reflects all of the other colors of light and stimulates the blue light. Students adjust different color lights for RGB bulb configuration, first with individual settings, then with a combination of two and three colors to see what color results and are understood. Similarly, with a bulb-design, students note that the color settings for light with different color components affect. The physics of color thought are interesting links to biology. Other animals have very different views of the world than humans, especially in which colors can be seen. The color is detected by the cells in the eye. Humans have three scans that are sensitive to three different ranges of the electronic wave. They are called red, blue, and green shanks, although these colors do not fit perfectly in the three-row centers. The dimensions are red to the wave ranges that each detects, 500 to 700 nm; Green, 450 to 630 nm; And blue, 400 to 500 nm. Most animals also have three types of shanks in the raisa and the world sees more as we do. The most stale animal is only two shanks, except for the animal. Let's have a less colorful view. Dogs, see for example And yellow, but red and green are dark. You might think that simple species, such as fish and insects, would have a less sophisticated approach, but that's not the case. Many birds, reptiles, burning, and insects have four or five different shanks in their eyes. These species do not have a wide range of understood colors, but they look at the combination of more shapes, or colors. In addition, some animals, such as bees or ratlesnix, look at a range of colors that are as wide as ours, but move into the upper ewes or the scorpion. These differences in color perception are generally consistent with the animals that help survive. Colorful birds and fish represent some colors which are very good for our look. It is believed to play a role in color-matching rituals. Shape 15.7 Humans, bees and dogs are visible in color and shows the range of color. The 15.7 humans, honey bees and dogs see different colors. Dogs see less

color than humans, and see a different range of honey colors. The relationship between plants and their polsibotac-honey bees, birds, etc. is related to the color idea. Plants are designed for flowers with color that flies can easily see, and honey can easily find the flowers that are needed for survival. It is a misunderstanding to believe that the bells are red-looking. What did you read in the physics links about why this belief was wrong? The bell colors are color blind for each color in the spectrum. The blue color in the spectrum of the bell colors is dark. The color for red in the spectrum of the bell colors is dark. The color for green in the spectrum of the bell colors are dark. Humans have used the electronic spectrum for every part. We'll take a look at the use of each range of frequencies, starting with visible light. Most of our visible light usage is obvious. Without it our interaction swells around us would be very different. We can forget that all our food depends on the process of the dysentery in the plants, and the energy for this process comes from the visible part of the spectrum. Without the xia-san, we would have almost no oxygen in the atmosphere. Bl how the different frequency of M radiation applies. The name of each frequency range, and the application to the students, for example, is used in X-factor medical imaging. Ask students if they know that low frequency radiation usually uses different from high frequency radiation. Explain what it has to do with the power of the fast, which is related to health risks. Al-Qaeda TV signal ranges mentioned very high frequency (wahf) and Yultrega frequency (Yof) nominated. It explains that frequency radio broadcasts are only relatively high compared to frequency. Their place in the entire EM spectrum is at the low end. There are many applications in media broadcasting in the lower frequency, spectrum and the region. Radio, cell phone, and remote control devices all transmit and/or receive signals with these dimensions. Both M and FM radio signals are low frequency radiation. They are in different areas of spectrum, but this is not their main difference. M and FM are the main sources of the medicine and frequency. Information in M signals is the shape of a change in the dimensions of radio waves . . . the information in fm signal is the form of changes in frequency. Another application of long-range radiation is found in the microwave oven. These devices cook or warm food by the erriditang with EM radiation in the microwave frequency range. Maximum kitchen use microwave frequency 2.45 × 10 9 2.45 × 109 Hz. It is the correct amount of energy due to the water, such as the polar ine, to rotate the waves faster. Polar Ino is the separation of those who charge partly. These are given to surrounding matters as the energy heats the surrounding. The first microwave oven was called Radrangas because they were based on radar technology developed during World War II. Radar uses radiation with a long wave and meets these people from remote objects like microwaves to detect the speed, such as aircraft, weather configuration, and motor vehicles. Radar information is obtained by receiving and analyzing the microwave's object reflected by an object. The speed of the object can be measured using the repeater shift of the return waves. When you study the sound waves, it's the same effect you learned. Like sound waves, EM waves are moved to higher frequency by something that moves toward an object, and moves away from the observer to reduce frequency by an object. The hagulds use the same dopler effect to measure the speed on which remote galaxies move away from us. In this case, the shift in frequency is called red transfer, because the visible frequency is moved to the red end of the spectrum, the lower frequency. Exposure to any radiation with greater frequency than those of visible light carries some health risks. All types of radiation in this range are known to cause cell damage. The risk is related to the high energy and the rapid ability of their waves. The probability of damage by any of this radiation largely depends on the amount of exposure. Most people try to reduce the exposure of UV radiation from sunlight using screens and protective clothing. Doctors still use X-ray to diagnose medical problems, but the intensity of radiation is very low. The 15.8-x-ray image of a patient's chest between shows. A medical imaging technique that involves no exposure is magnetic magnetic magnetic imaging (MRA). MRI is an important imaging and research tool in medicine, which produces highly detailed two and three-dimensional images. Radio waves are broadcast, re-removed in the emotion and the snout process which is sensitive to the density of the novel, usually No. - Proteins. The 15.8-figure Shadow X-Ray image shows many interesting features, such as artificial heart valves, a make-up maker, and wires used to turn off the sternum. Use these questions to estimate the student's success of the learning objectives of the (Credit: P.P. Urone) section. If students are struggling with a specific purpose, these questions will help identify any differences on the relevant content and directly students. 1. Identify the fields developed by the transferred source. Both an electric field and a magnetic field will be developed. Neither a magnetic field nor an electric field will be developed. A magnetic field, but no power field will be created. Only the electric field, but no magnetic field will be developed. 2. X-rays carry more energy than visible light. Compare these two types of EM radiation frequency and dimension. Visible light is more frequency and lower than x-rays. The light of view has low frequency and lower frequency than x-rays. The visible light has more frequency and is longer than the X-ray. The visible light has a lower frequency and is longer than the X-factor. 3. How does the increase in frequency during the wave change EM ? The dimension increases. The dimension moves first and then decreases. The dimension decreases first and then increases. The wave is less. 4. Why not use broken bones in imaging, instead of radio waves? X-ray radio has more energy than waves. X-ray radio has less energy than waves. X-ray radio has a lower frequency range than waves. X-factor is longer than the wave radio waves. 5. Identify the areas that make the electronic wave. An electric field and a magnetic field are both not only a magnetic field nor an electric field just a magnetic field, but no electric field, but no magnetic field