CHAPTER 17 MECHANICAL WAVES AND SOUND ASSESSMENT

When a wave is reflected, its speed is? Answer and Explanation: When a wave is reflected, it's speed won't change at all. The reflection of a wave will change the direction in which the wave is traveling equal to the angle of incidence on the surface it reflects on.

When two waves interfere, the displacement when two troughs meet is? When two waves interfere, the resulting displacement of the medium at any location is the algebraic sum of the displacements of the individual waves at that same location.

What does a mechanical wave generally not do? Flexi Says: A mechanical wave generally does not transfer matter, it only transfers energy through a medium.

Which type of mechanical wave needs a source of energy to produce it? Answer and Explanation: All mechanical waves require a source of energy, whether the waves in question on sound waves, waves in the water, or others.

How to find the frequency of a wave? If the wavelength and speed of a wave are known, these can be used to find the frequency of a wave using the equation f = v ? , where is the wavelength in meters and v is the speed of the wave in m/s. This also gives the frequency of the wave in Hertz.

Does wave speed change when reflected? This is because reflection involves a change in the direction of the wave, not a change in its speed or other characteristics. The speed of a wave is determined by the medium through which it travels, and since the medium does not change during reflection, neither does the speed.

What happens if the crest of one wave overlaps the trough of another wave? Wave Interference If the waves' crests and troughs overlap, the resulting effect is that the waves reinforce each other. This is called constructive interference. If the opposite occurs and one wave's crest overlaps the other's trough, the waves cancel out each other. This is known as destructive interference.

What happens to amplitude when two waves meet? Once the two waves meet, their crests will overlap and create a new wave with a larger amplitude. For example, if the amplitudes of the two waves are 4 meters, then once interfering, they will create a resultant wave with an amplitude of 4 meters.

What happens when waves combine but the crests and troughs do not perfectly line up? In constructive interference, the peaks and troughs of waves line up and make an overall larger amplitude. Destructive interference is when the two waves are out of phase with one another, and they combine to form an overall smaller amplitude of the resulting wave.

What is the only type of wave that is not a mechanical wave? Non-mechanical waves are waves that do not need any medium for propagation. Sound waves, water waves and seismic waves are some examples of mechanical waves. The electromagnetic wave is the only non-mechanical wave.

Can mechanical waves travel through a vacuum? Mechanical wave depends on particle interaction to transport their energy from one location to another. They cannot travel through vacuum, which are void of particles. Sound wave is an example of a mechanical wave, which is not capable of travelling through a vacuum.

What is the formula for mechanical waves? For mechanical waves the formula for v has a generic form: v = Stiffness/Inertia . For example, in a stretched string the wave speed is given by v = T/μ , where T is the string tension and ? is the mass per unit length of the string.

What is the difference between a wave and a signal? A signal is a function of wave. A signal could be a single pulse or a series of pulses that oscillate in a particular manner following the pattern of a wave. Whereas if you talk only about a wave it is the basic structure of periodic oscillations occuring with a set pattern and

frequency .

What is it called when waves change speed when they pass through an object? Refraction, or bending of the path of the waves, is accompanied by a change in speed and wavelength of the waves. So if the media (or its properties) are changed, the speed of the wave is changed. Thus, waves passing from one medium to another will undergo refraction.

What substance carries a mechanical wave? What are 3 examples of mediums for mechanical waves? A medium is matter through which waves can travel. They can be a solid, liquid, or a gas. Three familiar examples of mediums mechanical waves travel through are air, water, and solid earth.

What increases as amplitude increases? The correct answer is (D) Increases the volume. The amplitude of a sound wave refers to how "tall" the wave is or how much it displaces air particles as it travels. Sounds with a greater amplitude are louder, or have a higher volume. Thus, increasing the amplitude will increase the volume of the sound.

What is the symbol for frequency? What is the symbol of frequency? The symbols most often used for frequency are f and the Greek letters nu (?) and omega (?). Nu is used more often when specifying electromagnetic waves, such as light, X-rays, and gamma rays.

What is the crest in a wave? The highest surface part of a wave is called the crest, and the lowest part is the trough. The vertical distance between the crest and the trough is the wave height. The horizontal distance between two adjacent crests or troughs is known as the wavelength.

Which electromagnetic wave carries the most information? High-frequency electromagnetic waves are more energetic and are more able to penetrate than low-frequency waves. High-frequency electromagnetic waves can carry more information per unit time than low-frequency waves.

What could be an obstruction to waves? Obstructions to waves can include natural barriers like reefs, islands, and sandbars, as well as human-made structures like breakwaters, seawalls, and piers. 3. The wind is the most common cause of

wave creation because it is a constant and widespread force that acts on the surface of the water.

What conditions are required to produce a standing wave? The formation of standing waves is not limited to any specific type of wave and can occur with light, sound, and other types of waves. However, the conditions for their formation remain the same. The waves must be moving in opposite directions, they must have the same frequency, and they must have the same amplitude.

What happens when a wave is reflected? The law of reflection states that when a wave reflects off a plane surface, the angle of incidence is equal to the angle of reflection. In other words, the wave will have the same angle leaving the surface as it did arriving, relative to the normal of the surface.

What is always the speed of a reflected wave? Reflected Wave: all reflected some reflected none reflected some reflected all reflected reflection is inverted reflection is upright Reflection is always reversed. Reflected wave speed is always the same as the incident wave speed.

Does speed of sound change when reflected? When sound travels in a given medium, it strikes the surface of another medium and bounces back in some other direction. This phenomenon is called the reflection of sound. During reflection, the frequency, speed and wavelength of the wave do not change.

Are reflected waves slower? Waves always travel fastest in the least dense medium. Thus, the reflected pulse will be traveling faster than the transmitted pulse.

Thermochemistry Practice: Thermochemical Equations

Thermochemistry deals with the study of heat changes during chemical reactions. Thermochemical equations represent these reactions and provide information about the enthalpy change associated with them. Here's a practice exercise to enhance your understanding:

Question 1: Balance the following thermochemical equation and determine the enthalpy change:

C2H5OH(l) + 3O2(g) ? 2CO2(g) + 3H2O(l)

Answer:

C2H5OH(l) + 3O2(g) ? 2CO2(g) + 3H2O(l) ?H = -1367 kJ/mol

Question 2: Calculate the enthalpy change for the reaction:

2Na(s) + Cl2(g) ? 2NaCl(s)

Answer:

?H = -822 kJ/mol (exothermic reaction)

Question 3: Determine whether the following reaction is exothermic or endothermic:

CH4(g) + 2O2(g) ? CO2(g) + 2H2O(g) ?H = +890 kJ/mol

Answer:

Endothermic (positive ?H)

Question 4: Use Hess's law to calculate the enthalpy change for the reaction:

CaCO3(s) ? CaO(s) + CO2(g)

Answer:

?H = ?Hf(CaO) + ?Hf(CO2) - ?Hf(CaCO3) = +178 kJ/mol

Question 5: Predict the products of the combustion of propane (C3H8):

Answer:

C3H8(g) + 5O2(g) ? 3CO2(g) + 4H2O(g)

Symbol Barcode Scanner LS2208 Quick Start Guide

Q: How do I connect the LS2208 scanner to my computer?

A: The Symbol LS2208 barcode scanner connects via a USB cable. Simply plug the USB cable into an available USB port on your computer. The scanner will automatically be recognized by your computer and installed.

Q: How do I scan barcodes with the LS2208 scanner?

A: To scan barcodes, simply point the scanner's laser beam at the barcode and press the trigger button. The scanner will automatically read the barcode and transmit the data to your computer.

Q: What types of barcodes can the LS2208 scanner read?

A: The Symbol LS2208 barcode scanner can read 1D barcodes, such as Code 39, Code 128, and UPC-A.

Q: How do I configure the LS2208 scanner?

A: The Symbol LS2208 barcode scanner can be configured using the Symbology Editor software. This software allows you to customize the scanner's settings, such as the scan pattern, the trigger mode, and the output format.

Q: What is the warranty period for the LS2208 scanner?

A: The Symbol LS2208 barcode scanner comes with a standard 1-year warranty.

What are the 5 C's of coaching and mentoring? His initial research examined coaches' roles and responsibilities within a professional football academy. Based on his findings, he developed a 15-week educational programme, coined The 5Cs Framework – because it nurtures player commitment, communication, concentration, control and confidence.

What's the difference between coaching and mentoring? Coaching typically involves providing constructive feedback so that the employee can make specific improvements. Conversely, a mentor can advise the mentee on what to do, but it's up to the mentee what to do with that advice.

What is the coaching style of mentoring? Coaching is one of the many mentoring styles that involves a mentor guiding a mentee through challenges, providing feedback, and helping set and achieve specific goals for skill development. Benefits – Enhances specific skills, improves performance, and encourages goal achievement.

What is the coaching approach to mentoring? A Coaching Approach to Mentoring utilises the skills and tools of coaching to support colleagues in a way that

allows space for thinking and dialogue.

What are the 4 Ps of coaching? The 4Ps Coaching Model circle separated into quarters including the words Plan, Problem, Possible, and Present.

What are the 5 Ps of coaching? By embracing the five Ps of strategic coaching, organisations can navigate a clear pathway towards using coaching as a strategic asset. Purpose, partnership, planning, patterns, and people—these elements combine to unlock the full potential of coaching and help companies improve their business performance and success.

What are the four types of coaching?

What are the four main stages of mentoring?

Do I need a coach or a mentor? A mentor can offer advice on building meaningful professional relationships and navigating organisational dynamics, while a coach can provide practical strategies for networking and communication skills.

What is the most popular coaching style?

What is the most important mentoring and coaching technique? The two most important skills for a coach are the ability to ask good questions and the ability to listen effectively. Don't ask closed questions that call for a yes or no answer (such as "Did that cause a problem?").

What are the pillars of coaching and mentoring? These seven pillars, active listening, goal setting, questioning, feedback, confidentiality, adaptability, and continual development, provide the foundation for effective coaching. A coach who is adept at these skills can help their clients achieve their goals, develop their potential and make meaningful change.

What are 3 key differences between coaching and mentoring? Mentoring: The Role of the Helper. Both coaches and mentors play a crucial role in helping individuals advance in their careers. Coaches identify areas for improvement and provide tools for growth, while mentors act as role models, offering support and paving the way for mentees to progress.

Can coaching and mentoring be used together? A recent study published in the journal Sustainability found that a combined program of mentoring and coaching employees is an effective way of improving organizational commitment and work performance.

What is the clear model of coaching and mentoring? model is a transformational coaching process often used with leaders and executives. It is designed in such a way that the same process is used in each session of a coaching program. The stages of the CLEAR model are: Contract, Listen, Explore, Action, Review.

What are the 3 C's of coaching? This is where the principles and practices of coaching—which are based on real and lasting behavior modification—can help you thrive. To meet these expectations, consider incorporating coaching into your practice, as well as adopting three common traits of highly effective coaches: curiosity, courage, and compassion.

What are the 5 R's of coaching? Coaching sessions typically follow the relate, review, reflect, refocus, and resource model with the intent of celebrating wins, learning from results, identifying next steps, and determining what kinds of support and resourcing is needed.

What are the 5 E's of coaching? These phases include Engage, Explore, Explain, Elaborate, and Evaluate.

What are the 3 A's of coaching? The 3As method - Awareness, Acceptance, and Action - is a powerful coaching framework that supports individuals in embracing change and moving forward with confidence and success.

What are the 7 steps of coaching?

What are the 4 C's of coaching? The 4Cs in Coaching - Competence, Confidence, Connection and Character/Caring.

What are the 5 C's of team coaching? A successful team relies on one another, has good chemistry, and has a sense of unity. A we, not me, mentality. A great way to help your team come together is to strive for the five C's, which stand for communication, camaraderie, commitment, confidence and coachability.

What are the C's of mentoring? Effective mentorship, the cornerstone of personal and professional growth, is characterized by the four pivotal Cs: Counsel, Correction, Connection, and Champion. These key mentoring principles serve as the bedrock upon which it thrives.

What are the 5 basic elements of a coaching session? The five basic elements of a coaching session are rapport-building, goal-setting, exploration and discussion, action planning, and accountability.

What are the 5 R's of coaching? Coaching sessions typically follow the relate, review, reflect, refocus, and resource model with the intent of celebrating wins, learning from results, identifying next steps, and determining what kinds of support and resourcing is needed.

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