CHAPTER 19 LENSES ANSWERS

What type of image is a copy of an object formed at the location from which the light rays appear to come? A virtual image is a copy of an object formed at the location from which the light rays appear to come.

What is the point through which all reflected light rays pass? The focal point (F) of a concave mirror is the point at which a parallel beam of light is "focussed" after reflection in the mirror. For a convex mirror the focal point is the point from which light appears to have originated after reflection from the mirror.

What is an object made of transparent material that has one or two curved surfaces that can refract light? The lens is a clear material that generates images through refraction on one of its two surfaces. Lenses refract light. It can be plane or curved. Always curved at one or two surfaces.

Why can concave lenses form only one type of image? A concave lens cannot form a real image because rays passing through a concave lens bend outward (diverge out) and never meet.

What are the images formed by lenses? Convex (converging) lenses can form either real or virtual images (cases 1 and 2, respectively), whereas concave (diverging) lenses can form only virtual images (always case 3). Real images are always inverted, but they can be either larger or smaller than the object.

Where is the image of the object formed? The image is formed at the retina (shown in yellow) which is located in the back of the eye. The retina is the sensory membrane that lines the inner surface of the back of the eye. The two types of photoreceptor cells in the human eye - the rods and the cones are also present in the retina.

What is the point through which light rays pass? Hence, a point on the principal axis of a lens through which light passes undeviated is called an optical center.

What happens to light rays that pass through a concave lens? Therefore, when a light ray suffers refraction from a concave lens, it diverges the light ray. Upon tracing back the diverged light ray we get the position of the virtual image formed. Hence, the virtual image is generally formed on the side of the object.

How does light move when reflected? Reflection occurs when light traveling through one material bounces off a different material. The reflected light continues to travel in a straight line, but in a different direction. Here are some things to remember about reflection. Light is reflected at the same angle that it hits the surface.

What is a lens bounded by two spherical surfaces curved inward called? concave lens. A lens having two spherical surfaces both curved inside is called a concave lens.

What is a transparent refracting medium bounded by two curved surfaces called? Detailed Solution. The correct answer is lens. A lens is a piece of transparent material bound by two surfaces of at least one that is curved.

How does regular reflection differ from diffuse reflection? Regular reflection occurs when all of the parallel rays reflected from a plane surface are parallel. Diffused or irregular reflection occurs when all of the parallel rays reflected from a plane surface are not parallel. Reflection from a smooth surface like that of a mirror is an example of regular reflection.

What kind of lens can form a virtual erect and diminished image? The image formed by a concave lens is virtual, erect, and diminished.

Are diverging lenses upright or inverted? Plane mirrors, convex mirrors, and diverging lenses will always produce an upright image. A concave mirror and a converging lens will only produce an upright image if the object is located in front of the focal point.

Can a concave lens be used to produce an enlarged and erect image? The given statement is false. A concave lens can only form an erect, diminished and

virtual image of an object.

What is an image that forms at a location from which light rays appear to come but do not actually come? As this type of image is formed due to the imaginary intersection of light rays, it is called a virtual image.

What is the location of an object in an image called? Localization information represents the location of an object on an image. The location is represented by a bounding box that surrounds the object. The bounding box structure contains the upper-left coordinates of the bounding box and the bounding box's width and height.

Is an image a copy of an object formed by light? Flexi Says: An image is a copy of an object formed by reflected or refracted light.

Which image is seen at the point where the image is actually formed? When you look at an object directly, you see a real image. This means that the light rays from the object converge at a point in front of your eye, and you see the actual object.

What are the principles of bloodstain analysis? BPA uses principles of biology (behavior of blood), physics (cohesion, capillary action and velocity) and mathematics (geometry, distance, and angle) to assist investigators in answering questions such as: Where did the blood come from? What caused the wounds? From what direction was the victim wounded?

What is the role of bloodstain pattern analysis in criminal investigation? Bloodstain pattern analysis evaluations are conducted to determine what action(s) or sequence of actions could have created the bloodstains and/or patterns observed.

What is the theory of blood spatter analysis? Bloodstain pattern analysts consider the angle of impact to determine its origin and the amount of force behind it; variations in external forces can cause satellite drops. A point of origin can be determined by finding what bloodstain analysts call the "area of convergence" for the blood droplets.

What are three things bloodstain pattern analysis can tell an investigator? Bloodstain pattern analysis is done at violent crime scenes to help the investigator analyze the crime scene. Bloodstain pattern can provide many details: location and

orientation of persons and/or objects at the time the blood was shed; minimum number of violent events (strikes, shots, etc.);

What are the 3 main patterns of blood spatter analysis? Bloodstains are classified into three basic types: passive stains, transfer stains and projected or impact stains. Passive stains include drops, flows and pools, and typically result from gravity acting on an injured body.

What is the bloodstain pattern analysis method? This analysis can be done using strings and a protractor, mathematical calculations or computer models. Tools used to determine area of convergence and area of origin include: Elastic strings and protractors. Mathematical equations - (tangent trigonometric function)

How is blood Analysed in criminal investigations? The blood stain is initially subjected to blood typing. Proteins, enzymes, and antigens present in the blood of the individual are also analyzed. In addition, analysis of the blood for HLA typing from white blood cells may be carried out.

How effective is blood pattern analysis? Linacre also notes that bloodstain pattern analysis is never going to be as definitive as other forensic evidence, like DNA. “Blood pattern is ultimately a subjective judgment. It is based upon the experience and knowledge of the examiner. “We try and remove that a lot from forensic science.

What must investigators do before analyzing blood stains? Analysts or investigators will typically soak up pooled blood, or swab small samples of dried blood in order to determine if it is human blood and then develop a DNA profile. This becomes critical when there are multiple victims.

What 4 things can blood spatter analysis tell us? Blood Spatter Analysis Analysis of a spatter pattern can aid in determining the: • direction blood traveled. angle of impact. point of origin of the blood. velocity of the blood.

How can blood be used as evidence in a crime? The most common applications of blood evidence are: Finding blood with the victim's genetic markers (ABO blood type, DNA profile, etc.) on the suspect, on something in the suspect's possession, or something associated with the suspect (such as the suspect's fingerprints).

How is blood evidence detected at a crime scene? The search for the presence of blood at a crime scene is normally done by close visual examination. The possibility exists, however, that blood may be present in amounts too little to see with the unaided eye, or that the blood at the scene had been “cleaned up” prior to arrival of the crime scene team.

How does blood spatter analysis help solve crimes? Bloodstain pattern analysis provides important forensic information about the crime under investigation; it tells what happened. Bloodstain patterns occur in several distinct categories, each revealing a piece of the crime scene puzzle.

How can too much blood affect a crime scene? Too much blood can disguise spatter or make stain patterns unrecognizable. Conversely, too little blood, just one or two drops, will likely yield little or no useable information. Stains that overlap or come from multiple sources present challenges to analysts, but often reveal valuable details about the crime.

What qualifications does a bloodstain pattern analysis possess? Minimum pretraining requirements for a bloodstain pattern analysis (BPA) trainee are a bachelor's degree or equivalent in a field of study related to BPA from an accredited college or university; or an associate' degree or equivalent in a field of study related to BPA from an accredited college or university and 2 ...

What are the basic principles of blood banking? Today, blood banks collect blood and separate it into its various components so they can be used most effectively according to the needs of the patient. Red blood cells carry oxygen, platelets help the blood clot, and plasma has specific proteins that allow proper regulation of coagulation and healing.

What are the principles of blood sampling?

What are the principles of hematology Analyser? The hematology analyzer is used to count blood cells, classify leucocytes, and determine haemoglobin levels. The detection principle includes two principles: the electrical and optical principles.

What are the four things we can determine from blood spatter analysis? We've become used to hearing how blood samples are used to identify someone through

DNA. But the blood itself -- where it lands, how it lands, its consistency and the size and shape of the blood droplets, or spatter -- can determine a lot of significant aspects of the crime.

What are the effects of high loading rate on reinforced concrete beams? As the loading rate increases, the bearing capacity augments, and higher increment in the bearing capacity for beam with lower strength of materials.

What is slab concrete reinforcement? A reinforced concrete slab is a key structural feature and is used in buildings to provide flat surfaces (floors and ceilings). In general, slabs are divided into a one-way slab and two-way slab based on the reinforcement given beam support, and span ratio.

What is reinforcement for reinforced concrete work? The reinforcement is usually, though not necessarily, steel bars (rebar) and is usually embedded passively in the concrete before the concrete sets. However, post-tensioning is also employed as a technique to reinforce the concrete. In terms of volume used annually, it is one of the most common engineering materials.

What is the reinforcement of stress in concrete? Concrete beams are reinforced with steel rods (reinforcing bars) in order to resist internal tension forces within the cross section. Unlike wood and steel, which can withstand substantial tension stress, concrete may be safely stressed only in compression.

How does rate of loading affect the strength of concrete? The strain-rate effect is inversely proportional to the strength of concrete. As rate of loading increases, compressive strength, modulus of elasticity, and the slope of the descending portion of the stress-strain curve of concrete increase.

What are the disadvantages of reinforced concrete slab?

What is the best reinforcement for a concrete slab? Steel is the most common material used as reinforcement, but other materials such as fiber-reinforced polymer (FRP) are also used. The reinforcement must be of the right kind, of the right amount, and in the right place in order for the concrete struc- ture to meet its requirements for strength and serviceability.

What is the strength of a reinforced concrete slab? Each concrete structure has a normally acceptable psi range. Concrete footings and slabs on grade typically require a concrete of 3,500 to 4,000 psi. Suspended slabs, beams, and girders (as often found in bridges) require 3,500 to 5,000 psi.

Do I need reinforcement in a concrete slab? Any construction element that is intended to carry a heavy load should always be reinforced, especially foundations, footings, columns and slabs. Without reinforcement, these elements could be compromised structurally or even fail entirely at some point in their lifespan.

What are 3 common types of reinforcement used in concrete? steel bars, steel cables, steel wire. Sometimes fiber reinforcement. Sometimes pvc tubes are cast into the concrete, and steel cables are fed through the tubes and pulled very tight after the concrete has cured many days. We call this post-tensioned.

How long does reinforced concrete last? Early 20th-century engineers thought reinforced concrete structures would last a very long time – perhaps 1,000 years. In reality, their life span is more like 50-100 years, and sometimes less.

How strong is reinforced concrete? Generally speaking, however, reinforced concrete is an incredibly strong material. It has been known to withstand disasters such as earthquakes and hurricanes with minimal damage. One of the most impressive examples of the strength of reinforced concrete is the Petronas Towers in Kuala Lumpur, Malaysia.

What happens if you don't use rebar in concrete? Concrete without rebar is considered brittle. As the pressure increases on pure concrete, it will suddenly break without warning. On the other hand, concrete that includes rebar is considered ductile. That means that as pressure increases, small fissures and cracks can be seen forming in the concrete.

What are the three stresses of concrete? There are three fundamental types of stress: compression (pushing together), tension (pulling apart), and shear (sliding along a line or plane). And, not all materials can resist each type of stress equally. It turns out that concrete is very strong in compression but very weak in tension.

Is adding rebar to concrete considered reinforcement? Not all projects require the use of concrete rebar reinforcement, but adding it will greatly reduce the number of cracks that appear in concrete surfaces over time. Concrete surfaces required to uphold large trucks, heavy machinery or nonstop traffic need concrete rebar reinforcement.

What happens to concrete when a constant load is applied? Under sustained compressive loads, concrete will continue to deform for long periods of time. After the initial deformation occurs, the additional deformation is called creep [11].

What are the two most important factors affecting strength of concrete?

What is the capacity of concrete to withstand loads before failure? Compressive strength is the maximum stress taken by a material or structural element before undergoing crushing failure. It is the most important mechanical property of structural concrete as it is always supposed to take compressive load under the normal loading conditions.

What are the effects of load on a beam? The ductility and stiffness decrease as the load or time exposed to fire increase. Regarding different cross-sectional sizes, the ductility and stiffness of the beams are improved as the size of the cross section increases.

What is the effect of loading rate? Generally, the effect of increasing loading rate is to increase strength (positive strain rate dependence), but microstructural influences (such as dynamic strain ageing) can cause negative strain rate dependence). Strain rate sensitivity increases with temperature.

What are the effects of loads on structures? A load causes stress, deformation, displacement or acceleration in a structure. Structural analysis, a discipline in engineering, analyzes the effects of loads on structures and structural elements.

What are the effects of sustained loading and corrosion on the performance of reinforced concrete beams? Higher loading level and longer corrosion period are prone to cause the brittle failure of RC beams. Increasing the sustained loading extends the longitudinal crack but not the crack width.

What is the Liebherr Group code of conduct? shall be characterized by decency, mutual respect, fairness and trust. Open communication should always be nurtured. Personal insults or sexual harassment will not be tolerated. The privacy of each employee must be respected within reason.

What are the five codes of conduct?

What is the standard code of conduct? A code of conduct includes policies and rules for employees and employers to follow in the workplace. Often, a company uses its core values, including its mission, to guide the creation of these codes. These guidelines outline how people can appropriately interact with one another at work.

What is Yeti code of conduct? Suppliers shall conduct business in compliance with all applicable laws and shall avoid engaging in any activity which could be deemed a corrupt and/or unethical practice. Suppliers shall maintain integrity, transparency and accuracy in all records of matters relating to their business with YETI.

What is the employee code of conduct? A code of conduct should emphasise the importance of integrity and ethical behaviour in the workplace. This includes avoiding conflicts of interest, not engaging in illegal activities or substances, and promoting honesty, transparency, and expected behaviour in personal and professional capacities.

What is the team code of conduct? The Code of Conduct is intended to state norms or rules that all team members agree to follow. Items to consider include: • What do “on time” and “attendance” mean? responsibilities? What happens when one of the team members lets the others down?

What are the 4 P's code of conduct? It's structured around four themes – prioritise people, practise effectively, preserve safety and promote professionalism and trust.

What are the 5 principles of the code of conduct? It is divided into three sections, and is underpinned by the five fundamental principles of Integrity, Objectivity, Professional competence and due care, Confidentiality, and Professional behaviour.

What are the 5 rules of conduct? The Rules of Conduct are based on ethical principles of honesty, integrity, competence, service, respect, and responsibility.

What is the OSHA code of conduct? No worker may be subjected to any physical, sexual, psychological, or verbal harassment or abuse, including corporal punishment, under any circumstances, including, but not limited to, retaliation for exercising his or her right to free speech and assembly.

What is the rule of code of conduct? A company code of conduct is a set of rules which is commonly written for employees of a company, which protects the business and informs the employees of the company's expectations. It is appropriate for even the smallest of companies to create a document containing important information on expectations for employees.

What is an example of a code of conduct? A code of conduct in practice can range from big picture ideals to specific rules. For example, a code of conduct can outline how employees should behave to reflect the organization's wider mission, but it can also define fixed regulations related to internal practices such as dress code or break policy.

What is Callaway code of conduct? Be honest and trustworthy in all communications and conduct. For example, lying, cheating or stealing is not permitted.

What is the hobo code of conduct? Always respect nature; do not leave garbage where you are jungling. If in a community jungle, always pitch in and help. Try to stay clean, and boil up wherever possible. When traveling, ride your train respectfully.

What is the Giant Eagle code of conduct? Suppliers must refrain from engaging in any conduct or activities that may appear improper or may result in a conflict of interest, including activities that could be perceived as improperly influencing a decision that may result in nepotism (a personal gain for the Suppler or immediate family member), and not ...

What are the standards of code of conduct? A code of conduct sets out clearly the leadership's expectations for behaviour across the business in the areas of integrity, objectivity, confidentiality, professional behaviour and professional

competence. It helps to ensure employees are comfortable in their working environment.

What is the disciplinary code of conduct? A disciplinary code refers to the workplace rules that aim to protect labour relations and are included in a company's employment contracts or operate as a separate policy document. These are in place to protect both employees and employers and to settle disputes according to a set process.

What is the new employee code of conduct? The Employee Code of Conduct policy details the behavioral expectations for employees towards colleagues, supervisors, and the organization. It emphasizes open communication, professionalism, respect, and adherence to laws, while also outlining potential disciplinary actions for violations.

What is a code of conduct to employees? A code of conduct is a set of internal guidelines that employees must follow while they work for you. It outlines your corporate values and commitments as a company. More specifically, it sets the standards and expectations for employee behaviour and allows you to tailor your company culture.

What are the five codes of ethics?

How to start a code of conduct?

What is the code of conduct for a group? A code of conduct is a set of guidelines that defines the expected behavior, values, and standards of a group or organization. It can help your team to work together more effectively, avoid conflicts, and uphold ethical principles.

What is a group work code of conduct? A Code of Conduct is a set of principles that helps guide our actions and attitudes, and it reflects the values of our Code of Ethics. It helps us to comply with the law and to conduct ourselves to the very best of our ability, whether dealing with colleagues, clients or our communities.

What is the company code of ethics and conduct? A code of ethics is broader, providing a set of principles that affect employee mindset and decision-making. A code of conduct offers principles defining the ethics of a business, but it also

contains specific rules for employee actions and behavior.

What is a member code of conduct? A code of conduct guides the behavior of your board members, and it serves as a set of principles to guide their decision-making and other activities. Your code of conduct policy ensures that your board members are accountable for the decisions and choices they make.

> *principles of bloodstain pattern analysis theory and practice practical aspects of criminal and forensic investigations*, *impulsive loading on reinforced concrete slabs*, *code of conduct liebherr*

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