

# PHYSICAL SCIENCE QUIZ QUESTION AND ANSWER LDSARTORE

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**What is physical science the study of \_\_\_\_\_ and \_\_\_\_\_?**

Expert-Verified Answer. Physical science is the study of matter and energy. Physical scientists examine all the "stuff," or matter, in the world. They also identify forms of energy and try to figure out what happens to the energy in the universe.

**In which of the following states of matter is the average distance between particles in a given substance typically the smallest?** Solid: Solids are those, whose molecules are bounded tightly, hence the distance between them is the least. The molecules are fixed in a position. It has definite shape as well as mass.

**What is physical science answers?** Physical science is the study of the inorganic world. That is, it does not study living things. (Those are studied in biological, or life, science.) The four main branches of physical science are astronomy, physics, chemistry, and the Earth sciences, which include meteorology and geology.

**Which statement best describes why a cork floats in water?** Which statement best describes why a cork floats in water? The density of cork is less than the density of water.

**What are the 5 types of physical science?**

**What is physical science called now?** Natural science can be divided into two main branches: life science and physical science. Life science is alternatively known as biology, and physical science is subdivided into branches: physics, chemistry, astronomy and Earth science.

**What are the three stages of matter?** There are three states of matter: solid; liquid and gas. They have different properties, which can be explained by looking at the arrangement of their particles. This is the theoretical temperature at which particles have the least amount of energy and the slowest movement.

**Which state of matter are the particles farthest apart?** Particles are furthest apart in gases. In gases, the particles are so far apart from each other that gases are relatively easy to compress. Gases are formed from liquids through evaporation or boiling. Particles in liquids are closer than in gases but they are further apart than in solids.

**What state of matter is very far apart?** In a gas, the particles have very little attraction to each other. They are very far apart compared to the particles in a solid or liquid, and are constantly moving.

**What is the short form of physical science?** Phys. Sci.". It is the recommended abbreviation to be used for abstracting, indexing and referencing purposes and meets all criteria of the ISO 4 standard for abbreviating names of scientific journals.

**What are the two main areas of physical science?** The two main types of physical science are physics and chemistry. Physics is the study of how matter is affected by energy. Chemistry is the study of the properties of matter and how it transforms through its interactions with other substances.

**What are the 10 examples of physical science?** Here are the 10 major branches of physical science: Astronomy, Astrophysics, Chemistry, Earth Science, Geography, Geology, Meteorology, Oceanography, Physics, Planetary Science.

**What sinks in water?** The heavy materials or substances sink to the bottom of the water solution. Example: Copper, silver, gold, sand, and chalk powder.

**Why does a cork not sink in water?** As you can see, corks would float because they are less dense than the water, and coins would sink because they are more dense than the water. Q. A cork piece floats on the water surface while an iron nail sinks in it.

**Why do things float or sink?**

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**What are the 3 branches of physical science?** The four main branches of physical science are astronomy, physics, chemistry, and the Earth sciences, which include meteorology and geology.

**What is the most basic physical science?** Pure physics is a branch of fundamental science (also called basic science). Physics is also called "the fundamental science" because all branches of natural science like chemistry, astronomy, geology, and biology are constrained by laws of physics.

**What is physical science also known as?** Physical science is one of the important components of natural science which deals with the study of non-living processes/systems and it is in contrast to life science. Physical science has several branches, and each of it is called "physical science" and together it is known as "physical sciences".

**Who is the father of science?** Few individuals have had as profound an impact on science as Galileo, whose groundbreaking inventions and discoveries earned him the title 'the father of science'. Galileo was an experimentalist who for the first time had the insight and talent to link theory with experiment.

**What was the first physical science?** Ancient history. Elements of what became physics were drawn primarily from the fields of astronomy, optics, and mechanics, which were methodologically united through the study of geometry. These mathematical disciplines began in antiquity with the Babylonians and with Hellenistic writers such as Archimedes and Ptolemy.

**What is the hardest physical science?**

**What are three liquids?**

**What is the smallest unit of matter?** Answer: An atom is the smallest unit of matter known to retain all chemical properties of an element.

**What state of matter is smoke?** Smoke is a collection of tiny solid, liquid and gas particles. Although smoke can contain hundreds of different chemicals and fumes, visible smoke is mostly carbon (soot), tar, oils and ash. Rights: Scion. Smoke. Smoke is a collection of tiny unburnt particles – very small carbon particles and tiny

droplets of tar.

**What state of matter is most common on Earth?** Answer: Gas, solid, liquid are the most common states of matter found on earth.

**Which state of matter holds its own shape?** A solid is the state of matter that has a definite shape and volume.

**Which state of matter has no definite volume or shape?** Gases have no definite shape or volume.

**What does physical science study?** Physical Science is the study of inanimate natural objects, including chemistry, geology, physics and astronomy. Career paths chosen by students pursuing undergraduate studies in the physical sciences commonly include chemistry, physics, engineering, geology, astronomy and environmental science.

**What are the two main areas of physical science?** The two main types of physical science are physics and chemistry. Physics is the study of how matter is affected by energy. Chemistry is the study of the properties of matter and how it transforms through its interactions with other substances.

**What is physical science also known as?** Physical science is a branch of natural science that studies non-living systems, in contrast to life science. It in turn has many branches, each referred to as a "physical science", together is called the "physical sciences".

**What is physical science study of matter and energy?** Physics is the study of matter, energy and the interactions between them. It includes the study of mechanics, heat, light and other radiation, sound, electricity, magnetism, and the structure of atoms.

**What are the 10 examples of physical science?** Here are the 10 major branches of physical science: Astronomy, Astrophysics, Chemistry, Earth Science, Geography, Geology, Meteorology, Oceanography, Physics, Planetary Science.

**What grade level is physical science?** Overview. Purposefully created for 8th- or 9th-grade students, Exploring Creation with Physical Science, 4th Edition will lead

students to appreciate, understand, and grasp the wonders of God's creation while exploring chemistry, physics, earth science, and scientific research.

**Is physical science hard?** Physics is a challenging subject ? it's a combination of math and science that can be difficult even for the best of us.

**What is the most basic of the physical sciences?** Physics is a fundamental science because other natural sciences deal with systems that obey physics laws. The physical laws of energy, matter, and nature's forces govern the interactions between particles, such as atoms and molecules. Some basic principles of physics are: Newton's Laws of Motion.

**What is the abbreviation for physical science?** Phys. Sci.". It is the recommended abbreviation to be used for abstracting, indexing and referencing purposes and meets all criteria of the ISO 4 standard for abbreviating names of scientific journals.

**What are the two major components of physical?** Physical fitness can be defined in two categories: health related and motor related. The health related components of physical fitness are of great importance because they make an individual fit, functional and productive for everyday living.

**What are the 5 branches of physical science?** Explore the branches and subbranches of physical science, including physics, chemistry, geology, meteorology, and astronomy.

**What falls into physical science?** The discipline of Physical Science is concerned with the study of the physical world around us. It primarily concerns non-living systems and includes the fields of Physics, Astronomy, Chemistry, and Geology.

**What's another name for physical science?**

**What is the main focus of physical science?** Physical science is the study of non-living organisms and seeks to explain the behavior of physical objects. Physical science falls into two main areas: physics and chemistry with numerous subgroups, such as astronomy and geology.

**What is chemistry in physical science?** Chemistry is the study of matter, analysing its structure, properties and behaviour to see what happens when they

change in chemical reactions. As such, it can be considered a branch of physical science, alongside astronomy, physics and earth sciences including geology.

**What is the energy of motion?** kinetic energy, form of energy that an object or a particle has by reason of its motion. If work, which transfers energy, is done on an object by applying a net force, the object speeds up and thereby gains kinetic energy.

**How do you calculate SAG tension for overhead lines?** As in the case of conductor, the tensions at 0°C (No-wind & full wind Condition), 32°C full wind conditions and 75°C no-wind condition are determined.  $\text{Sag} = [WLA^2 / 8TA]$  where LA = Actual span.

**How to calculate for sag?** The sag relative to a support equals cable weight per unit length times the distance to the low point squared divided by twice the horizontal tension. The tension at a support equals the overall tension plus the cable weight per unit length times the sag relative to a support.

**What is the sag in the overhead transmission line?** The difference in level between the points of support and the lowest point on the conductor is called as sag. Keeping the desired sag in overhead power lines is an important consideration. If the amount of sag is very low, the conductor is exposed to a higher mechanical tension which may break the conductor.

**What is the relationship between sag and tension?** Span: Sag is directly proportional to the square of the span length. Longer span gives more sag. Tension: The sag is inversely proportional to the tension in the conductor. Higher tension increases the stress in the insulators and supporting structures.

**What happen to tension if the sag in an overhead line increases?** The distance between the points of the line support and the minimum point on the line is known as sag. From the above expression, we observed that sag is inversely proportional to the tension developed. ? If the sag on transmission is increased, the tension will decrease.

**What is a sag in an overhead power line required to reduce?** Advantage of sag is, it reduces the tension in conductor between two poles and that is why it's

important. Disadvantage is, it decreases the clearance level. Sag is the difference in level between the point of support and the lowest point on the conductor. Sag is extremely important for overhead transmission lines.

**What is the accurate SAG formula?** I apologise if this is a basic question on a site such as this but my maths skills aren't the best. The exact sag equation is  $s=r\sqrt{r^2-y^2}$ .

**What is the formula for line tension?** Answer: The line tension is  $\gamma$  = edge energy per unit length = ( surface energy of edge, J m<sup>-2</sup> )  $\times$  ( area of unit length of edge, m<sup>2</sup> ) / ( unit length, m ) =  $\gamma = ( 27 \times 10^{-3} ) \times ( 2.0 \times 10^{-9} \times 1.0 ) / ( 1.0 ) = 5.4 \times 10^{-11} \text{ J m}^{-1} = 5.4 \times 10^{-11} \text{ N}$ .

**Why do we calculate SAG?** Sag is an important indicator of the operational health of a transmission line, and its timely measurement is of great significance to maintain the stability and reliability of power systems. However, traditional contact measurements may be affected by the electromagnetic interference of conductors.

**What are the factors affecting SAG in overhead transmission lines?**

**How to reduce sag in transmission line?** The method includes a first act of mounting the cable between two towers, such that when mounted between the towers said cable has a cable load, a second act of stretching the cable to have a sag less than a desired sag, a third act of releasing at least some of the tension to obtain the desired sag, wherein the act of ...

**What is the effect of wind on sag calculation?** Because wind will increase apparent weight of the conductor, as a result increase in tension and due to maximum temperature there will be maximum sag. From the result, it is clear that due to wind effect there is increase in tension occur.

**What is the formula for SAG cable?**  $h = \text{cable sag} = x ( \cosh ( d / ( 2 * x ) ) - 1 )$ ,  $s = \text{cable length} = 2 * x * \sinh ( d / ( 2 * x ) )$  is a function of  $d$  (distance) Where,  $q$  = cable weight per unit length,  $w$  = cable mass per unit length,  $g$  = force perpendicular to cable length,  $n$  = cable tension,  $d$  = straight line distance, homework-and-exercises.

**What are the disadvantages of SAG in transmission line?** If there is too much sag in a transmission line, it will increase the amount of conductor used, increasing

the cost more than is necessary. It Causes Power Failure: When a transmission line sag excessively, it is liable of causing power failure.

**What is the formula for working tension?** Tension is a force that works in medium lengths, especially those that are flexible, such as rope or cord. Tension force remains a gravitational force. If the body is moving upwards then the tension will be referred to as the  $T = W + ma$ . When the body goes down, the thickness is the same as  $T = W - ma$ .

**How to distinguish between sag and tension as used in overhead line?** Discuss the relation between sag and tension in OHTL. The difference in level between points of supports and the lowest point on the conductor is called sag. The conductor sag should be kept to a minimum (i.e. a tight wire and high tension) in order to 1. reduce the conductor material required 2.

**What is tension in overhead transmission line?** Tension depends on several factors, such as the weight of the conductor, the span length, the sag, the wind pressure, the ice loading, the temperature, and the elasticity of the material. Tension is not constant along the line, but varies according to the terrain, the weather, and the load.

**What does the SAG depend upon in overhead transmission line?** In conclusion, the sag in a transmission line conductor depends on several factors such as the conductor material, height of the tower, and the tension in conductors.

**Why are overhead power lines tied with sag?** The sag in overhead conductors prevents the conductor from excessive tension. To provide protection against this tension on conductors, the conductors are not stretched up to their maximum limits and are allowed to have sagged.

**Why should voltage sag be eliminated?** Voltage sags have an effect on delicate electrical apparatus like communication equipment and laptops. If the number of sag events is high it may lead to loss of data and improper operation of protection equipment.

**How do you control voltage sag?**

**How do you calculate correction due to SAG?**

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**What is the recommended SAG setting?** Most manufacturers recommend that you set your sag somewhere between 25 to 35 percent. If your sag is higher or lower than that, you need to make some adjustments by attaching your shock pump and increasing or decreasing the air pressure in the shock and running the calculation again.

**What is the correction for sag?**

**How to calculate tension?** We know that the force of tension is calculated using the formula  $T = mg + ma$ .

**What is the formula for tension and compression?** Tensile stress is the normal force per area ( $\sigma = F/A$ ) that causes an object to increase in length. Compressive stress is the normal force per area ( $\sigma = F/A$ ) that causes an object to decrease in length.

**How do you calculate tension strength?** Tensile strength is often referred to as ultimate tensile strength and is calculated by dividing the peak tension force the sample withstands by its cross sectional area.

**How do you calculate slack side tension?** Slack Side Tension (8:1)  $TS = 0.285(Q)$   
 $pd$  Where: TS = Slack side tension, lb. Q = Torque load, lb-in  $pd$  = Pitch diameter, in.  
 $V$  = Belt speed, ft/min  $T_e$  = Effective tension, lb.

**What is the equation for the sag of a rope?**  $h = \text{cable sag} = x ( \cosh ( d / ( 2 * x ) ) - 1 )$ ,  $s = \text{cable length} = 2 * x * \sinh ( d / ( 2 * x ) )$  is a function of  $d$  (distance) Where,  $q$  = cable weight per unit length,  $w$  = cable mass per unit length,  $g$  = force perpendicular to cable length,  $n$  = cable tension,  $d$  = straight line distance, homework-and-exercises.

**What is the formula for line tension?** Answer: The line tension is  $\gamma = \text{edge energy per unit length} = ( \text{surface energy of edge, J m}^{-2} ) \times ( \text{area of unit length of edge, m}^2 ) / ( \text{unit length, m} ) = \gamma \gamma = ( 27 \times 10^{-3} ) \times ( 2.0 \times 10^{-9} \times 1.0 ) / ( 1.0 ) = 5.4 \times 10^{-11} \text{ J m}^{-1} = 5.4 \times 10^{-11} \text{ N} .$

**How do you calculate sag percentage?** To calculate your sag percentage, divide the static travel by the total length of the shock and multiply by 100. Most

manufacturers recommend that you set your sag somewhere between 25 to 35 percent.

**What is the slack side tension?** Tight side and slack side When belt is running over pulley, the friction creates grip on pulley which creates tension on one side of belt which makes the driven pulley to run, this side is called tight side. The other side does not experience same tension, that side is called slack side.

**How do you calculate tensions?** Tension force remains a gravitational force. If the body is moving upwards then the tension will be referred to as the  $T = W + ma$ . When the body goes down, the thickness is the same as  $T = W - ma$ .  $T = W$  if the discomfort is equal to body weight.

**What is the belt tension formula?** This is done by dividing the total calculated tension by the belt width. Therefore Unit Tension = Belt tension (N) / Belt width (mm) giving units of N/mm width.

**What is the formula for the tension of a hanging rope?** There is a 10 kg mass hanging from a rope. What is the tension in the rope if the acceleration of the mass is zero? Solution: We know that the force of tension is calculated using the formula  $T = mg + ma$ .

**Why do we calculate SAG?** Sag is an important indicator of the operational health of a transmission line, and its timely measurement is of great significance to maintain the stability and reliability of power systems. However, traditional contact measurements may be affected by the electromagnetic interference of conductors.

**What is the formula for the tension of a tight rope?** The pulling force that acts along a stretched flexible connector, such as a rope or cable, is called tension,  $T$ . When a rope supports the weight of an object that is at rest, the tension in the rope is equal to the weight of the object:  $T = mg$ .  $T = m g$ .

**What is tension in overhead lines?** The gravitational force, weight, acting on a hanging cable causes tension to exist. The tension has a vertical and horizontal component, and is tangent to the catenary. Minimum tension is found at the lowest point of the arc where the tension is equal to zero. Maximum tension is found at the supports.

**What is the formula for tension in a string pulley?** If we take the body of mass  $m$ , we know that the tension in the string connected to it is given by  $T = mg + ma$ . Hence,  $T = m(g + a) = m(12.8 + 9.80) = 1108 \text{ N}$ .

**What is the formula per tension?** The tension formula is given by,  $T = W + ma$ , when the body moves upward.  $T = W - ma$ , when the body moves backward.

**What is the accurate SAG formula?** I apologise if this is a basic question on a site such as this but my maths skills aren't the best. The exact sag equation is  $s = r^2 / (r^2 + y^2)$ .

**How do you measure your sag?** Measure the distance from the rear axle up to a fixed point, like the fender and side panel junction, in line with the arc of the axle. You can also put a mark on the fender, which lines up with an even number to make it a little easier to calculate.

**What is a sag percentage?** Once you're off the bike, measure the distance between the o-ring and the seal of your shock and divide that number by your stroke length to get the percentage, which is your amount of sag. Once again with the Hightower example, if that distance measures 16mm and the stroke is 55mm, it's  $16/55 = .29$ , or 29% sag.

## **The Nuts and Bolts of Federated Identity Management: A Q&A**

**Q: What is federated identity management (FIM)?** A: FIM is a framework for managing user identities across multiple domains or organizations. It allows users to access applications and resources from different providers using a single set of credentials.

**Q: Why is FIM important?** A: FIM simplifies user management, improves security, and enhances user convenience. It eliminates the need for multiple usernames and passwords, reduces the risk of data breaches, and improves user experience by providing seamless access to applications and resources.

**Q: How does FIM work?** A: FIM involves three key components: an identity provider (IdP), a service provider (SP), and a trust relationship. The IdP verifies the user's identity and issues a token. The SP accepts the token and grants the user access to

the application or resource. The trust relationship establishes the rules and protocols governing how the IdP and SP interact.

**Q: What are the benefits of FIM?** A: FIM offers numerous benefits, including:

- **Improved security:** By centralizing user authentication, FIM reduces the risk of unauthorized access and data breaches.
- **Enhanced user convenience:** Users only need to remember a single set of credentials to access multiple applications and resources.
- **Simplified user management:** Administrators can easily manage user identities and access privileges from a central location.
- **Reduced costs:** FIM can save organizations money by eliminating the need for multiple identity management systems.

**Q: What are the challenges of FIM?** A: FIM can present certain challenges, such as:

- **Compatibility issues:** Different IdPs and SPs may not be compatible, requiring custom integrations.
- **Scalability concerns:** Large-scale FIM deployments can be complex and resource-intensive.
- **Security risks:** If the IdP or SP is compromised, it can compromise the security of all federated applications and resources.

## **Toyota Estima 2002: A Comprehensive Guide**

**Q: What are the key features of the 2002 Toyota Estima?**

A: The 2002 Estima is a spacious and versatile minivan featuring:

- Three-row seating for up to eight passengers
- Sliding doors on both sides for easy access
- Ample cargo space behind the third row of seats
- Powerful 2.4-liter inline-four or 3.0-liter V6 engine

**Q: How does the Estima perform on the road?**

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A: The Estima provides a comfortable and stable ride with responsive handling. The 2.4-liter engine offers adequate power for everyday driving, while the 3.0-liter V6 delivers more spirited acceleration. The suspension system effectively absorbs bumps and road imperfections.

**Q: What are the safety features available on the 2002 Estima?**

A: The Estima prioritizes safety with a range of features, including:

- Anti-lock brakes (ABS) with Electronic Brakeforce Distribution (EBD)
- Side-impact airbags for the front seats
- Curtain airbags for all three rows of seats
- Traction control (on select models)

**Q: What are the common issues to look out for when buying a used 2002 Estima?**

A: As with any used vehicle, there are a few potential issues to be aware of with the 2002 Estima:

- Some models may experience transmission problems, particularly with the automatic transmission.
- Check for any signs of rust, especially on the undercarriage and around the wheel wells.
- Listen for any unusual noises when driving, as they could indicate suspension or steering issues.

**Q: What are the advantages and disadvantages of the Toyota Estima 2002?**

A: Advantages:

- Spacious and versatile interior
- Comfortable and stable ride
- Ample safety features
- Reliable and fuel-efficient engines

## Disadvantages:

- Not as sporty or stylish as some competitors
- Limited cargo space behind the second row of seats with all rows in use
- Some potential transmission issues

[sag and tension calculations for overhead transmission](#), [the primer nuts and bolts of federated identity management](#), [toyota estima 2002](#)

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