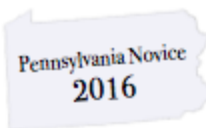


## Pennsylvania Novice 2016

Written by Sameer Apte, Eric Barrett, Paul Birch, Greg Cortazzo, Seekin Kara, Aakash Patel, Reed Repasky, Steven Silverman, Srishti Srivastava, and Bill Tressler  
Edited by Ryan Bilger, Chris Chiego, Ben Herman, and Victor Prieto



### Packet 2 Tossups

**1. This scientist co-names an equation for calculating chemical potential of varying components of mixtures with Pierre Duhem. His namesake phase rule describes the number of degrees of freedom for those mixture components. For an electrochemical cell, a quantity named for this scientist is equal to the negative product of the electrode potential, Faraday's constant, and number of electrons transferred. That quantity is equal to (\*) enthalpy minus temperature times entropy. For 10 points, name this scientist whose free energy determines whether a reaction is spontaneous.**

ANSWER: Josiah Willard Gibbs

**2. In this novel, the lecturer Helmholtz Watson is exiled to the Falklands for reading a heretical poem to his students. Another character in this novel locks himself in a lighthouse and commits suicide over his conflicted feelings about Lenina Crowne. In this novel, Bernard Marx travels to New Mexico and meets John the Savage. Humans in this novel are segregated into classes (\*) Alpha through Epsilon, and are kept happy through addiction to the drug soma. For 10 points, name this dystopian novel by Aldous Huxley.**

ANSWER: Brave New World

**3. This leader often resided in the "Winter White House" in Key West. Puerto Rican Nationalists attempted to assassinate this leader at the Blair House. He announced the Point Four Program and the (\*) Marshall Plan to stimulate the economies of nations at risk of Communism. He unexpectedly defeated Thomas Dewey to win the presidential election of 1948 despite a mistaken headline in the *Chicago Tribune*. For 10 points, name this president who ordered the dropping of atomic bombs on Hiroshima and Nagasaki and succeeded Franklin Delano Roosevelt.**

ANSWER: Harry S. Truman

**4. Ego depletion is the use of energy to consciously act against this quality. Raymond Cattell divided it into 16 primary traits that could be measured. The MMPI is a standard test on adults to determine this quality, and inkblots are used to projectively measure it during the Rorschach Test. Tests for it often include categories like (\*) "neuroticism" and "introversion." For 10 points, "Type A" and "Type B" can describe what patterns of belief and behavior that make humans individuals?**

ANSWER: personality

**5. One of these objects is depicted in the first painting of Umberto Boccioni's *States of Mind* series and is adorned with the number "6943." One of these objects emerges from a fireplace in Rene Magritte's painting *Time Transfixed*. A hare attempts to (\*) escape from the path of one of these objects as it crosses the Maidenhead Bridge in another painting. For 10 points, name this type of vehicle depicted in J.M.W. Turner's *Rain, Steam, and Speed: The Great Western Railway*.**

ANSWER: **train** (or **locomotive** or train **engine**)

**6. One character in this work puts on a cross and kisses the ground at the Haymarket before hearing of Svidrigailov's [sa-vid-ri-gay-lov's] death. The drunkard Marmeladov is killed after being hit by a carriage in this novel, which forces his daughter Sonia into prostitution. The protagonist of this novel claims he wanted to become another Napoleon and so used an axe to (\*) murder Lizaveta and the pawnbroker Alyona. For 10 points, name this work by Fyodor Dostoevsky that ends with Raskolnikov in Siberia after committing the first and then experiencing the second title event.**

ANSWER: **Crime and Punishment**

**7. This scientist's name is alphabetically first in a paradox relating to quantum entanglement, which he famously called "spooky action at a distance." This scientist suggested light could be quantized to try to explain the photoelectric effect. In (\*) 1905, his "Annus Mirabilis," he proposed that the speed of light remained constant in all reference frames. For 10 points, name this German scientist famous for his theories of special and general relativity and the equation  $E=mc^2$ .**

ANSWER: Albert **Einstein**

**8. This country was ruled in medieval times by the Piast dynasty, which was succeeded by the Jagiellonian [yag-lee-ON-i-an] dynasty. This nation assisted Austria in repelling the Turks at Vienna in 1683 under King John III Sobieski. 1980 protests by the (\*) Solidarity labor movement including Lech Walesa took place at this country's Gdansk Shipyards. This country did not exist in the 19th Century due to three partitions of it by neighbors. For 10 points, name this eastern European country where resistance rose against Nazi Germany during the Warsaw Uprising.**

ANSWER: **Poland** (or **Polska**)

**9. This artist protested Francisco Franco's seizure of the Almaden mines by creating a fountain that spews mercury. This sculptor created a massive, bright red steel sculpture in Seattle called *Eagle*, and a similar one in Chicago's Federal Plaza called *Flamingo*. This artist's most famous type of work was given its name by Marcel Duchamp. Those works are (\*) kinetic sculptures whose parts would move with ambient air currents, such as the Museum of Modern Art's *Lobster Trap and Fish Tail*. For 10 points, name this American sculptor who is best-known for his mobiles.**

ANSWER: Alexander **Calder**

**10. This character's struggle with alcoholism was documented in the "Demon in a Bottle" storyline. His life was saved by Maya Hansen's Extremis virus that granted him enhanced abilities. In one film, he tells the Mandarin that his address is "10880 Malibu Point." This man fights Obadiah Stane after building a miniature arc reactor in one film. (\*) J.A.R.V.I.S. was this man's old computer system. In *The Avengers*, this character diverts a nuclear missile headed for New York. For 10 points, name this genius billionaire Marvel hero, who builds and flies advanced suits of armor.**

ANSWER: **Iron Man** (or Tony **Stark**)

**11. The Japanese ship *Chikyu* is designed to reach this layer. The D-double-prime region is at the bottom of this layer and has much lower viscosity than its surroundings. The Mohorovičić discontinuity is the upper bound on this layer and refracts waves differently than adjacent regions. The (\*) upper portion of this region contains a zone in which seismic waves travel more slowly than normal. For 10 points, name this second-outermost layer of the Earth, which lies between the crust and the core.**

ANSWER: Earth's **mantle** (prompt on Mohorovic discontinuity before "D-double")

**12. This battle opened on Miller's Cornfield, when forces under Joseph Hooker attempted to capture Dunker Church. During this battle, the Sunken Road became known as "Bloody Lane." A stream crossing by Union forces in this battle eventually took place at (\*) Burnside's Bridge. After this battle, George McClellan was relieved of command for the final time. Following this battle, Abraham Lincoln issued the Emancipation Proclamation. For 10 points, name this bloodiest single-day battle in American history, which took place in Maryland.**

ANSWER: Battle of **Antietam** (accept Battle of **Sharpsburg**)

**13. A global seed vault is found on this country's island of Spitsbergen in the Svalbard archipelago, which is separated from this country's mainland by the Barents Sea. The Troll gas field is found offshore from this country, whose cities include Trondheim and Bergen. This country's western coast is indented by flooded (\*) valleys carved by glaciers called fjords, and it shares a long border with its eastern neighbor, Sweden. For ten points, name this Scandinavian country whose capital is Oslo.**

ANSWER: **Norway**

**14. This religion's funerary ceremony often involves tying the dead's toes together with string. This religion's wedding ceremony involves couples holding their hands near a fire to signify union. One springtime festival in this religion is commemorated by throwing (\*) colored powder at others.**

Another festival of this religion commemorates the defeat of Ravana with lanterns and lamps, earning it the nickname "festival of lights." For 10 points, which religion celebrates holidays such as Holi and Diwali?

ANSWER: **Hinduism**

**15. One character with this occupation is dissatisfied performing this job in Wheatsylvania and moves to the island of St. Hubert while working for the McGurk Institute. In addition to Martin Arrowsmith, another character in this profession is conscripted into a partisan unit and falls in love with Lara despite being married to Tonya. Another member of this profession sends Poole on a search for (\*) salt to create a draught before committing suicide. For 10 points, name this profession that includes both the Russian Yuri Zhivago and a man who transforms into Mr. Hyde, Henry Jekyll.**

ANSWER: **doctor** (prompt on scientist or researcher until “Lara”)

**16. One of this composer's works uses massive intervals of 10ths and 12ths to sound “jumpy.” This composer of the *Grosse Fuge* used a theme from his suite “The Creatures of Prometheus” in the finale to his third symphony, which was originally dedicated to Napoleon. In addition to the (\*) *Eroica* Symphony, another one of his symphonies opens in C minor with a short-short-short-long pattern representing fate. For 10 points, “Ode to Joy” is sung over the final moments of what composer’s 9th symphony, though he never heard it himself?**

Answer: Ludwig van **Beethoven**

**17. This country lost control of the Banda Oriental following the Cisplatine War. The Duke of Caxias led this nation’s forces to victory over Paraguay in the War of the Triple Alliance. Getulio Vargas ended “coffee with milk” politics in this nation and later established the an (\*) Estado Novo here. The Golden Law ended slavery in this nation. This country was led by Pedro II until his deposition in 1889. For 10 points, name this South American nation, formerly a colony of Portugal.**

ANSWER: **Brazil**

**18. This molecule is involved in a pathway known as its namesake interference which is started by the Dicer enzyme. During maturation, introns are spliced out and a poly-A tail is added to one end. HIV and other retroviruses infect cells with this molecule by using (\*) reverse transcriptase. Unlike its companion molecule, its structure includes the sugar ribose. For 10 points, name this biological polymer that comes in transfer and messenger varieties, produced in transcription from DNA.**

ANSWER: **RNA** (or **ribonucleic acid**; prompt on nucleic acid)

**19. Alan Gross was released from this country after being imprisoned for selling a type of cell phone while on a 2009 trip to arrange internet access to its Jewish community. The Helms-Burton Act imposing sanctions on this country remains in effect despite the July 2015 re-opening of this country’s embassy in (\*) Washington D.C. The Tampa Bay Rays defeated this country’s national team during a March 2016 visit from President Obama to here. For 10 points, name this Caribbean country still ruled by the Castro brothers from Havana.**

ANSWER: **Cuba**

**20. In one book by this author, a silver dollar falls from a merchant's fingers after seeing the title object, which had been discovered by Kino. The preacher Jim Casy is killed during a labor strike during one of this man's novels, and at the end of that novel, Rose of Sharon nurses an old man on a boxcar. In another work by this man, Curley's wife is accidentally suffocated to death by (\*) Lennie..** He also wrote of the migration of the Joad family from Oklahoma to California. For 10 points, name this American Author of works such as *The Pearl*, *Of Mice and Men*, and *The Grapes of Wrath*.

ANSWER: John Ernest Steinbeck

**TB. While serving as Chancellor of the Exchequer under Stanley Baldwin, his man controversially returned his country to the gold standard. As Lord of the Admiralty, he oversaw the disastrous Gallipoli landings during World War One. He said "I have nothing to offer but (\*) blood, toil, tears, and sweat" in his first speech in his highest office, and he reached that post upon the resignation of Neville Chamberlain. For 10 points, name this Prime Minister of Britain during World War II.**

ANSWER: Sir Winston Leonard Spencer-Churchill

# Pennsylvania Novice 2016



## Packet 2 Bonuses

1. This religion's monks include the Digambara, or sky-clad, who wear no clothes because their poverty vow forbids them possessions. For 10 points each:

[10] Name this religion from India which follows the concept of anekantavada, or non absolutism of viewpoints.

ANSWER: **Jainism**

[10] Jains also believe in this principle of nonviolence to all living things. Due to this, Jains are vegetarians and do not eat root vegetables because one must kill the whole plant to harvest them.

ANSWER: **ahimsa**

[10] In keeping with Ahimsa, Jains are known to sweep these creatures from their path to avoid killing them. Examples of these creatures include ants.

ANSWER: **insects** (or common equivalents like **bugs**, etc.)

2. This leader was a research chemist before beginning a career in politics. For 10 points each:

[10] Name this Conservative British prime minister of the 1980s, whom one Soviet newspaper referred to as the "Iron Lady".

ANSWER: Margaret **Thatcher**

[10] Thatcher set up a War Cabinet to handle this war, which was triggered by an Argentinian invasion of the namesake islands. During this war, British forces were victorious at the Battle of Goose Green.

ANSWER: **Falklands** War

[10] In 1984, Thatcher's commitment to dismantling trade unions led to a strike by workers in this industry. The union was lead by Arthur Scargill.

ANSWER: **mining** (accept **N**ational **U**nion of **M**ineworkers; accept word forms of **mining**)

3. In 2012, CERN announced evidence of this particle, which led to Nobel Prizes being awarded in 2013 to the physicists who initially theorized the particle's existence. For 10 points each:

[10] Name this particle, colloquially known as the "God particle." It is predicted to create a namesake field that permeates the universe.

ANSWER: **Higgs** boson

[10] The Higgs field is predicted to give matter this quantity, which is "how much matter there is." The SI unit for this quantity is the kilogram.

ANSWER: **mass** [do not prompt or accept "weight"]

[10] The Higgs boson has a value of zero for this quantity in quantum mechanics. The Pauli exclusion principle states no two electrons in the same orbital have this quantity, which can be either up or down.

ANSWER: **spin** [prompt on **angular momentum**]

4. Crowds rioted at the 1913 premiere of this ballet in which a girl is sacrificed by dancing herself to death. For 10 points each:

[10] Name this Russian ballet choreographed by Vaslav Nijinsky, intended to depict “primitive” pagan music celebrating nature during the title season.

ANSWER: **Rite of Spring**

[10] This Russian-American composer of the *Rite of Spring* was threatened with a fine in 1944 for producing an avant-garde version of the Star-Spangled Banner. He also composed the puppet ballet *Petrushka*.

ANSWER: Igor **Stravinsky**

[10] A bird made of this substance is the subject of another Stravinsky work. As depicted in Disney’s *Fantasia 2000*, that bird of this substance destroys a forest.

ANSWER: **fire** (accept **The Firebird**)

5. In this novel, a hand-to-hand struggle in an artillery shell crater leads to the death of Monsieur Duval, a printer. For 10 points each:

[10] Name this 1929 novel that follows Paul Baumer, whose death in the trenches of World War I is contrasted with this work’s title, which comes from a German army report.

ANSWER: **All Quiet on the Western Front**

[10] Paul and several of his comrades were inspired to enlist in the army by Kantorek, who held this occupation and talked glowingly of the “Iron Youth” before being conscripted as a soldier.

ANSWER: school**teacher** or school**master** (do not accept “professor”)

[10] This German author of *All Quiet on the Western Front* fled to Switzerland to avoid the Nazis and wrote *The Road Back* as a sequel.

ANSWER: Erich Maria **Remarque**

6. Types of these cells include basophils and neutrophils. For 10 points each:

[10] Name this class of cells that make up the human immune system. They may directly kill pathogens or release hormones.

ANSWER: **white blood cells** (or **leukocytes**)

[10] White blood cells can be affected by this disease, which is a type of cancer that results in abnormally high counts of white blood cells. It is sometimes treated with a bone marrow transplant.

ANSWER: **leukemia**

[10] One type of white blood cell is this cell, which engulfs intruder cells through the process of phagocytosis and move by amoeboid movement.

ANSWER: **macrophage**

7. For 10 points each, answer these questions about the very rare pitching feat of striking out 20 batters in one game.

[10] The most recent player to strike out 20 is Max Scherzer, who did it for this team in 2015. This team used to be the Montreal Expos and plays their home games in America’s capital city.

ANSWER: **Washington Nationals** (accept either underlined part)

[10] This player struck out 20 on two separate occasions, the only player to do so; both times, he was pitching for the Boston Red Sox. He was known as “The Rocket” and won a record 7 Cy Youngs.

ANSWER: Roger **Clemens**

[10] This other player joins Scherzer and Clemens as the only three pitchers to strike out 20 in one game, and he is the only rookie ever to do so. He is primarily remembered as a teammate of Mark Prior on the Cubs.

ANSWER: Kerry **Wood**

8. This man wrote about Herbert Badgery in his novel *Illywhacker*. For 10 points each:

[10] Name this Booker-winning novelist who also wrote about two gamblers trying to one-up each other in *Oscar and Lucinda*.

ANSWER: Peter **Carey**

[10] Carey is a native of this country. Another author from this country, Thomas Keneally, wrote *The Chant of Jimmie Blacksmith* from the point of view of an Aborigine observing white men.

ANSWER: **Australia**

[10] In *Oscar and Lucinda*, Lucinda bets Oscar that he can't transport a glass structure of this type over 400 kilometers. Victor Hugo's *Hunchback of Notre Dame* is largely set in one of these structures.

ANSWER: **church** or **cathedral**

9. Chinese tradition may have as many as sixty-four of these. For 10 points each:

[10] Name this type of god exemplified by the Mongol-Turkic deity Tengri, who is usually represented as a white goose.

ANSWER: Gods of the **Sky** (accept equivalents like **sky** deities)

[10] This Greek sky deity is the father of fellow Olympians Apollo and Aphrodite, among others. He also famously fathered many demigods, often disguising himself to seduce humans.

ANSWER: **Zeus** (or **Jupiter**)

[10] This Egyptian sky deity was often depicted with the head of a hawk. His all-seeing eye is sometimes considered to be of the Sun and the Moon.

ANSWER: **Horus**

10. High inflation during the 1890s led to the rise of a populist free silver movement. For 10 points each:

[10] Late 19<sup>th</sup> century businessmen supported a more stable monetary standard based on this metal.

Populists chafed at this metal's high price.

ANSWER: **gold**

[10] This man, the Democratic presidential nominee in 1896, 1900, and 1908, proclaimed "you shall not crucify mankind upon a cross of gold" at the 1896 Democratic Convention.

ANSWER: William Jennings **Bryan**

[10] Bryan was also known as an authority on the Bible and served as the prosecuting attorney in this 1925 Tennessee case challenging the teaching of evolution in schools.

ANSWER: **Scopes** Monkey Trial (or The State of **Tennessee v. John Thomas Scopes**)

11. This artist portrayed his family gathered around his expiring sister Sophie in *Death in the Sickroom*.

For 10 points each:

[10] Name this Norwegian artist, who collected many of his works in what he called *The Frieze of Life*.

ANSWER: Edvard **Munch**



[10] Munch's most famous painting is this one, which shows a man standing on a bridge holding his hands to his face and performing the title action. Its burning red-and-orange sky was likely influenced by the recent eruption of Krakatoa.

ANSWER: **The Scream**

[10] Munch created a depiction of this figure, shown bare-chested and with a red halo. Parmigianino painted an anatomically-incorrect version of this figure "of the Long Neck."

ANSWER: **Madonna** (accept **Virgin Mary** or **the Virgin**; prompt on **Mary**)

**12.** While pretending to go to New York to visit her sister, this character carries on an affair with Tom Buchanan, who ultimately breaks her nose. For 10 points each,

[10] Name this character who is struck and killed by a car driven by Daisy Buchanan.

ANSWER: **Myrtle** Wilson

[10] Myrtle, Tom, and Daisy are all characters in this novel, which takes place in West Egg and whose title character throws massive parties in the mansion next to Nick Carraway's home.

ANSWER: The **Great Gatsby**

[10] *The Great Gatsby* was written by this Jazz Age author who also penned *The Last Tycoon* and *This Side of Paradise*.

ANSWER: Francis Scott Key **Fitzgerald**

**13.** This acid is industrially synthesized from sulfur trioxide in the contact process. For 10 points each:

[10] Name this strong acid found in car batteries, with formula  $H_2SO_4$ .

ANSWER: **sulfuric** acid

[10] This other strong acid, which stains the skin yellow upon contact, is mixed with hydrochloric acid to form aqua regia. It is produced from ammonia in the Ostwald process.

ANSWER: **nitric** acid (or **HNO<sub>3</sub>**)

[10] This acid, whose formula is  $HClO$ , is produced in the chloroalkali process. The sodium salt of this acid is found in bleach.

ANSWER: **hypochlorous** acid (or sodium **hypochlorite**; do not accept "hyperchlorous acid")

**14.** This ruler of the 19th Dynasty was portrayed in a unique art style in which his hips were not turned. For 10 points each:

[10] Name this husband of Nefertiti who established a capital at Amarna. He tried to abandon polytheism as the state religion, but ultimately failed.

ANSWER: **Akhenaten** (or **Amenhotep IV**)

[10] Akhenaten tried to convert Egypt to a monotheistic religion featuring Aten, usually represented as this celestial object. Other gods identified with this object include Ra.

ANSWER: **Sun**

[10] The intact tomb of this son of Akhenaten was discovered in 1922 by Howard Carter and George Herbert. This pharaoh likely ascended to the throne at age nine or ten, and died mysteriously.

ANSWER: **Tutankhamun** (or King **Tut**)

**15.** Boris Johnson claimed that this organization's regulations prohibited selling abnormally curving bananas. For 10 points each:

[10] Name this international organization based in Brussels that consists of 28 member states in the continent of Europe. In June 2016, the United Kingdom voted to leave it.

ANSWER: **European Union** or **EU**

[10] Nigel Farage formerly led this anti-EU political party in the United Kingdom that had agitated for the "Brexit" vote and attracted disaffected Conservative Party voters.

ANSWER: **United Kingdom Independence Party** or **UKIP**

[10] This Conservative prime minister of the UK resigned shortly after the "Brexit" and was succeeded by Theresa May.

ANSWER: David **Cameron**

**16.** This character loses her friend Helen Burns to typhus. For 10 points each:

[10] Name this woman who attends the mismanaged Lowood school before becoming a governess and falling in love with her employer.

ANSWER: **Jane Eyre** (accept either underlined part)

[10] Jane Eyre eventually marries this owner of Thornfield Manor, who goes blind in a fire started by his mad wife Bertha Mason.

ANSWER: **Edward Rochester** (accept either underlined part)

[10] This author of Jane Eyre, one of three literary sisters, first published under the penname Currier Bell. Her other novels include *Shirley*.

ANSWER: **Charlotte Bronte** (prompt on **Bronte** alone)

**17.** This city lies on the Seine River and includes a broad avenue known as the Champs-Élysées. For 10 points each:

[10] Name this city, where one would find art museums like the Musee D'Orsay and the Arc de Triomphe monument

ANSWER: **Paris**

[10] Paris is the most populous city and capital of this European country, whose other major cities include Lyon and Marseilles.

ANSWER: **France**

[10] This longest river in France begins in Switzerland and flows through Lyon before emptying into the Mediterranean Sea near Marseille. Its delta, the Carmague, contains a species of feral horses.

ANSWER: **Rhone** River

**18.** This man declared himself "Lord of All the Beasts of the Earth and Fishes of the Seas," as well as the uncrowned king of Scotland. For 10 points each:

[10] Name this military dictator who came to power after deposing Milton Obote.

ANSWER: Idi **Amin** Dada

[10] During the "economic war," Amin expelled 80,000 people from this continent living in Uganda. The majority of people from this continent in Uganda descended from subjects of the British Raj.

ANSWER: **Asia** or **Asians**

[10] When a hijacked Air France plane landed at this Ugandan airport, Amin supported the hijackers. An ensuing Israeli counterterrorism operation resulted in the death of Yonatan Netanyahu.

ANSWER: **Entebbe** Airport (or Operation **Entebbe**)

**19.** Part of this mission's design included a lander named for Christiaan Huygens intended to land on Titan. For 10 points each:

[10] Name this still-running mission to an outer solar system planet launched in 1997. Besides Titan, it has also investigated the moons Rhea and Enceladus.

ANSWER: **Cassini**-Huygens mission

[10] The Cassini probe was the first spacecraft to enter orbit around this gas giant, whose ring system is the most easily observable in the solar system.

ANSWER: **Saturn**

[10] The second planetary ring system discovered were the rings around this other planet, which has a unique axial tilt of over ninety degrees.

ANSWER: **Uranus**

**20.** This composer's string quartets include the "Sunrise" and "Joke." For 10 points each:

[10] Name this German composer who wrote an incredible 104 Symphonies, such as the "Farewell" symphony.

ANSWER: Franz Joseph **Haydn**

[10] Haydn wrote C-major symphony, which has a recognizable C-C-E-E-G-G-E melody. Its name comes from the sudden tympani strike in the second movement.

ANSWER: **Surprise** Symphony (or Haydn's Symphony **No. 94** in C major, or Symphonie **mit dem Paukenschlag**. Do NOT accept "Drumroll Symphony")

[10] In many of his works, Haydn called for string players to pluck the strings with their fingers, which is notated by this musical term.

ANSWER: **pizzicato**

**TB.** This scientist discovered lysozyme when a droplet of mucus from his nose landed on one of his samples and killed nearby bacteria. For 10 points each:

[10] Name this scientist who accidentally discovered penicillin when mold contaminated another one of his bacterial samples.

ANSWER: Alexander **Fleming**

[10] The bacterial sample which was contaminated by Fleming's mucus was in one of these short plastic plate-like containers, which typically contain agar and are ideal for growing cells.

ANSWER: **Petri** dish

[10] Lysozyme and penicillin kill bacteria by preventing the production of this compound that makes up the cell wall.

ANSWER: **peptidoglycan** (or **murein**)