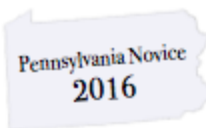


Pennsylvania Novice 2016

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 7 Tossups

1. While protecting this character, childhood friend Biggs Darklighter was shot down and killed by the experimental X1. This character grasped onto a weathervane after losing a battle on Bespin. After this character's tauntaun died, he killed a wampa on (*) Hoth using a weapon later recovered by Maz Kantana. His most recent film appearance is a silent cameo in which Rey shows him his original lightsaber. For 10 points, name this Jedi who in *Return of the Jedi* dueled with his father, Darth Vader.
ANSWER: Luke Skywalker (accept Luke; prompt on Skywalker alone)

2. The theoretical precursor to the Bose-Einstein Condensate, the Bose Gas, was a gas made of these particles. These particles undergo inelastic scattering when striking charged particles, called Compton scattering. In 1801, Thomas Young passed these particles through a (*) double slit to demonstrate their wave-like character. The energy of one of these particles is equal to Planck's constant times the speed of light over this particle's wavelength. For 10 points, identify these particles that make up light.
ANSWER: photon

3. This artist depicted himself sitting at a mirror and an easel and creating a sketch of himself with his right hand in his *Triple Self-Portrait*. This man also showed four U.S. Marshals accompanying Ruby Bridges to school in *The Problem We All Live With*. In one series he depicted two parents tucking their red-headed children into bed, a man in a tattered jacket rising to (*) speak, and a woman placing a Thanksgiving turkey on a table. For 10 points, name this artist of the *Four Freedoms* series, most famous for his works for the cover of the *Saturday Evening Post*.
ANSWER: Norman Percevel Rockwell

4. This figure and his brothers Vili and Ve were sired by Borr. This god sits on the Hlidskjalf [HLISS-gelf], and he discovered runes after hanging himself for nine days and nights. The wolves Geri and Freki often lie at the feet of this wielder of the spear Gungnir, and he also owned ravens named Hugin and Munin. He rides upon an (*) eight legged horse named Sleipnir, sacrificed an eye to Mimir for knowledge, and is married to Frigga. For 10 points, name this bearded allfather and chief Norse god.
ANSWER: Odin (accept Woden or Wotan)

5. In one work by this author, the Pollitt family patriarch believes he only has a “spastic colon,” but is in reality dying of cancer. In another work by this author of *Cat on a Hot Tin Roof*, a character nicknamed “Blue Roses” dances with the suitor Jim O’Connor before an object from the title display is broken. In a third play by this author, (*) Stanley Kowalski calls for Stella while she is seeking refuge with her sister Blanche DuBois. For 10 points, name this American playwright of *The Glass Menagerie* and *A Streetcar Named Desire*.

ANSWER: Thomas Lanier “Tennessee” Williams III

6. In 1982, a group from this country's air force attempted a coup against its president, Daniel Arap Moi. Groups like the Mungiki caused civil disorder after its 2007 election; in the aftermath, Ralia Odinga and Mwai Kibaki entered a power sharing agreement. Dedan Kimathi was the leader of this nation’s anti-colonialist (*) Mau Mau Rebellion in the 1950s, and its first post-colonial president was Jomo Kenyatta. For 10 points, name this East African nation whose capital is Nairobi.

ANSWER: Kenya

7. Resistance to this virus is conferred by a thirty-two base pair deletion in the CCR5 receptor gene. Patients with this virus may present with rapidly growing Kaposi’s sarcoma tumors. AZT was the first drug approved to treat this retrovirus, which is currently treated by a drug cocktail called HAART, or Highly Active (*) AntiRetroviral Therapy. If left untreated, infection with this virus may cause the CD4 T cell count to drop below 200 per microliter of blood, indicating a dangerously weak immune system. For 10 points, name this virus that may lead to AIDS.

ANSWER: HIV/AIDS (or human immunodeficiency virus; prompt on AIDS)

8. In one novella by this author, Andreich Laevsky’s decision to live with a married woman causes a scientist to nearly kill Andreich. That novella is *The Duel*. A play by this author includes the writer Boris Trigorin, and sees Konstantin give Nina a bird he has shot. Another of his plays concerns an estate owned by Mrs. Ranevskaya and ends with the sound of (*) axes cutting down a set of fruit trees. For 10 points, name this Russian author of *The Seagull* and *The Cherry Orchard*.

ANSWER: Anton Chekhov

9. One composer from this country ended a suite with a “cloudburst” movement and used trumpets to mimic the sound of crickets. Another composer from this country wrote a piece “for any instrument or combination of instruments” instructing the performer to sit silently for the title *Four Minutes, Thirty-Three Seconds*. Another composer from this country, Charles Ives, wrote the (*) “Concord Sonata” as well as the “Three Places in New England” suite. For 10 points, name this country home to the minimalist composer John Cage, as well as *Star Wars* composer John Williams.

ANSWER: United States of America or USA (accept any underlined portion)

10. This man defeated Desiderius at Pavia to conquer the Lombard kingdom, and then conquered Saxony and Bavaria. Advised by the scholar Alcuin of York and the subject of a biography by Einhard, this ruler's education reforms led to a namesake (*) "renaissance." This king established Aachen as his capital and was a grandson of Charles Martel. He was crowned the first Holy Roman Emperor by Pope Leo III on Christmas Day, 800 CE. For 10 points, name this "great" Frankish king.

ANSWER: Charlemagne (or Charles the Great or Carolus Magnus or Karl der Grosse or Charles I)

11. A recent advertisement for this product used "Under Pressure" as a tribute to David Bowie and introduced its new slogan, "Taste the Feeling." The 2016 Super Bowl commercial for this product featured the Hulk and Ant-Man. Originating as a jingle for this product, the song "I'd Like to Teach the World to Sing" hit #7 on the Billboard Chart. A 2012 ad for it involved a (*) Polar Bear trying to stay upright while grabbing this beverage on a frozen lake. For 10 points, name this soft drink, often associated through advertising with Santa Claus, the main rival of Pepsi.

ANSWER: Coca-Cola (or Coke)

12. One of this author's characters is the illegitimate son of the Ambassador Maximilian Ophuls, and once loved a dancer named Booyi. The title of one of this author's novels refers to prayers made to three Pagan goddesses; that work centers on a pair of Indian actors and led to a (*) fatwa against this man. This author wrote a novel in which the protagonist is among the infants who gain special powers by being born during the first hour of August 15, 1947 when Pakistan separated from India. For 10 points, name this author of *The Satanic Verses* and *Midnight's Children*.

ANSWER: Sir Ahmad Salman Rushdie

13. Sodium azide contains three atoms of this element, while cyanide compounds contain a carbon triple bonded to this element. This first element of the pnictogen family has a boiling point of 77 Kelvin, making it a useful cryogen. Two atoms of this element are reacted with six atoms of hydrogen in the (*) Haber process to produce ammonia. The most common gas in the atmosphere is this element's diatomic form, followed by O₂. For 10 points, name this element that falls between carbon and oxygen on the periodic table, with chemical symbol N.

ANSWER: nitrogen (or N before mention)

14. This man authored the Tariff of 1833, which replaced the Tariff of Abominations. After flip-flopping on his opinion about the legitimacy of John Tyler's attempt to annex Texas, he lost as the Whig Candidate in 1844 in the final of his three bids for Presidency. He became Secretary of State as part of the (*) "corrupt bargain" that elevated John Quincy Adams to the presidency in 1824. For 10 points, name this main negotiator of the Missouri Compromise and Compromise of 1850, a Kentuckian known as the "Great Compromiser."

ANSWER: Henry Clay Sr.

15. This city's citizenship enrollment was organized into *demes* by Cleisthenes [klys-tha-nees]. This city, linked to the port of Piraeus, sent Alcibiades on the Sicilian Expedition, and was defeated by Lysander at Aegospotami [ayjos-PO-temay] in 405 B.C. It headed the (*) Delian League and suffered a 430 B.C. plague that killed its leader, Pericles. The loser of the Peloponnesian War, for 10 points, name this Greek city, home to the Academy, the Acropolis, and the Parthenon.

ANSWER: Athens

16. A function has the uniform version of this property if one can bound the distance between two function values by bounding the distance between the corresponding arguments. The extreme and intermediate value theorems require that a function have this property. A function has this property at a point if its (*) limit at that point exists and is equal to the function value. For 10 points, name this property of functions, which can be colloquially expressed as the ability to be drawn with an unbroken pencil stroke.

ANSWER: being continuous (or obvious equivalents like having continuity)

17. Adherents of this faith are buried via open air towers called dhammas, which are designed to allow birds to eat the deceased, and are also known as towers of silence. This dualistic religion attributes evil things to the spirit Angra Mainyu, and its cosmology is found in the *Zend Avesta*. This religion's supreme god is (*) Ahura Mazda, and its practitioners worship at fire temples. For 10 points, name this faith founded by a namesake prophet around 500 B.C. that is centered in Persia.

ANSWER: Zoroastrianism (or Mazdayasna)

18. In one work by this man, a disembodied voice from above identifies the main character as a "guileless fool." In another work by this man, Senta leaps to her death off the coast of Norway, freeing a phantom ship and its captain from a curse. In addition to composing *Parsifal* and (*) *The Flying Dutchman*, this man introduced a variety of leitmotifs for characters such as Siegfried and Brunnhilde in his *Ring Cycle*. For 10 points, name this German opera composer known for "The Ride of the Valkyries."

ANSWER: Richard Wagner

19. This story is divided into five sections called "staves." The second section of this novella recalls how the protagonist's fiancée, Belle, left him. Early in this story, the protagonist refuses a party invitation from his nephew, Fred. This story begins seven years after the death of Jacob (*) Marley, and ends with the words "God bless us, everyone," which had earlier been spoken by Tiny Tim. For 10 points, name this story in which the ghosts of Christmas Past, Present, and Future visit Ebenezer Scrooge, written by Charles Dickens.

ANSWER: *A* Christmas Carol

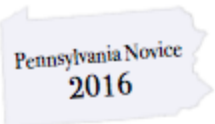
20. In this region, concentric circles of eroded rock form the Richat Structure, which is sometimes called its “eye.” Specimens of an unusual type of green glass are found in this region’s northeast. The Tuareg nomads inhabit the Air Massif in this region. The Qattara Depression is the lowest point in this region, which also includes the Grand Ergs in (*) Algeria. South of this region lies a belt of grasslands called the Sahel. For ten points, name this largest hot desert in the world that covers most of North Africa.

ANSWER: Sahara Desert (Prompt on Mauritania before “eye.”)

TB. The discovery of this particle’s tiny magnetic moment eventually led to the discovery of color charge in 1964. This particle, which consists of two down quarks and an up quark, are used to initiate fission by bombarding heavy nuclei. Experimenting with a type of radiation unaffected by electric fields led to (*) James Chadwick’s discovery of this particle. The number of these particles in an atom determines its isotope. For 10 points, name this chargeless particle found along with protons in the nucleus.

ANSWER: neutron

Pennsylvania Novice 2016



Packet 7 Bonuses

1. For 10 points each, give the following about miracles performed by Jesus:

[10] In his first public miracle, Jesus told the servants in the wedding at Cana to fill containers with water, leading to its transformation into this alcoholic beverage.

ANSWER: **wine**

[10] After arriving too late to witness the death of this brother of Martha and Mary, Jesus commanded him to “come out” of the tomb, and he immediately returned to life.

ANSWER: **Lazarus**

[10] In the Garden of Gethsemane [GETH-sem-an-y], Peter used a sword to cut off this appendage of the servant Malchus [MAL-kus], but the touch of Jesus heals the wound.

ANSWER: **ear**

2. The Fenske equation calculates the number of theoretical plates for this technique. For 10 points each:

[10] Name this technique of separating a mixture of liquids with different boiling points through repeated evaporation and condensation.

ANSWER: **distillation**

[10] Not all liquid mixtures can be separated by distillation. In this type of solution, the chemical makeup of the boiled vapor is equal to that of the liquid mixture, meaning evaporating and condensing the mixture does not change the mixture’s concentration.

ANSWER: **azeotrope**

[10] One commonly studied azeotrope is a mixture of about 5% water and 95% this substance, which has the chemical formula C_2H_6O and is often mixed with gasoline in car fuel.

ANSWER: **ethanol** (or **ethyl alcohol**)

3. Upon independence from Spain, this country was briefly a Constitutional Monarchy under Augustin I. For 10 points each:

[10] Name this Latin American nation which would later have Pancho Villa and Emiliano Zapata participate in periodic civil wars.

ANSWER: **Mexico**

[10] Mexico was led on and off by this general during the 19th century. He is infamous for leading the siege and subsequent massacre at the Alamo as well as burying his amputated leg with full honors.

ANSWER: Antonio de Padua María Severino López de **Santa Anna** y Pérez de Lebrón

[10] Santa Anna lost his leg after being hit by cannon during this 1839 War with France. Named for a type of food, it began because Mexico would not pay reparations to foreigners in Mexico whose property was destroyed.

ANSWER: **Pastry** War (or Guerra de **Los Pasteles**)

4. The “velocity” of this quantity is the frequency with which it changes hands. For 10 points each:
[10] Name this type of good that is generally used as a medium of exchange for other goods. It may be backed by commodities like gold or by the trust in a government in its “fiat” type.

ANSWER: **money** (do NOT accept “currency”)

[10] This system of banks in the United States regulates monetary supply. It is currently chaired by economist Janet Yellen.

ANSWER: **Federal Reserve** or **The Fed**

[10] The Federal Reserve can help regulate the supply of money in the United States by modifying the amount of this quantity charged on loans between Federal Reserve member banks. This term refers more generally to the amount paid to the bank on a loan.

ANSWER: **interest** rate

5. He served as the US Ambassador to Spain during James Polk’s presidency, which led to him writing *The Alhambra*. For 10 points each,

[10] Name this author, who featured the Dutch scholar Diedrich Knickerbocker in “A History of New York.”

ANSWER: Washington **Irving**

[10] In “The Sketchbook of Geoffrey Crayon,” Irving included the story “The Legend of Sleepy Hollow,” which features this pumpkin-headed villain.

ANSWER: The **Headless Horseman**

[10] This easily-frightened schoolmaster competes for the hand of Katrina Von Tassel in “The Legend of Sleepy Hollow” but disappears after an encounter with the Headless Horseman.

ANSWER: Ichabod **Crane**

6. This city was replaced by Abuja as its country’s capital in 1991. For 10 points each:

[10] Name this city, now the most populous in Nigeria as well as all of Africa. Many music styles like juju and Afrobeat originated in this city’s clubs.

ANSWER: **Lagos** (or **Eko**)

[10] Another large city in Africa is this capital of the Democratic Republic of Congo. Its colonial name was Leopoldville and the capital of the Republic of Congo, Brazzaville, is just across the Congo River.

ANSWER: **Kinshasa**

[10] Many of Africa’s largest cities are along this river, including Cairo and Khartoum. Its “white” branch originates in Lake Victoria before emptying into the Mediterranean Sea in Egypt.

ANSWER: **Nile** River

7. Weights can change the contribution of individual data points when calculating this quantity. For 10 points each:

[10] Name this quantity that equals the sum of a collection of data points over the total number of data points.

ANSWER: **arithmetic mean** (or **average**; prompt on **mean**)

[10] The arithmetic mean is strongly influenced by these data points that deviate significantly from the main body of data points.

ANSWER: **outliers**

[10] The geometric mean of two numbers is this operation applied to the product of the two numbers.
ANSWER: **square root** (or raised to the **one half power**; or logical equivalents; accept **nth root**)

8. Jim Smiley goes to search for one of these animals while a stranger pours lead shot into another of these animals named Dan'l Webster. For 10 points each:

[10] Name this type of "celebrated" jumping animal from Calaveras County, the subject of an 1865 short story written by Mark Twain.

ANSWER: **frog** (or The Celebrated Jumping **Frog** of Calaveras County)

[10] Cherokee Sal gives birth to Thomas, the title figure who perishes in a flood that destroys a mining community at the end of this short story by Bret Harte.

ANSWER: The ***Luck of Roaring Camp***

[10] Both the Celebrated Jumping Frog of Calaveras County and the Luck of Roaring Camp are set in this U.S. state during its major gold rush.

ANSWER: **California**

9. This king's mother, Isabella of France, deposed his father with her lover Roger Mortimer. For 10 points each:

[10] Name this English King, the victor of the Battle of Crecy, who reigned in England from 1327 to 1377.

ANSWER: **Edward III**

[10] Crecy occurred during this war, which Edward began to pursue his claim to the French throne. Better known episodes in it include Henry V's victory at Agincourt and Joan of Arc's leadership at Orleans.

ANSWER: The **Hundred Year's War**

[10] Edward's son, also named Edward, was known as the prince of this color. This color is also used to describe the Bubonic plague that ravaged England during Edward III's reign.

ANSWER: Edward the **Black** Prince

10. This club bolstered its backline in the summer of 2016 by signing French defenders Samuel Umtiti [oom-TEE-tee] and Lucas Digne [DEE-nyay]. For 10 points each:

[10] Name this soccer team, whose star players include Neymar, Luis Suarez, and Lionel Messi. Its main rival is Real Madrid.

ANSWER: FC **Barcelona** (or **Barca**)

[10] Lionel Messi is from this nation, which was defeated by Germany in the 2014 World Cup Final. Messi announced his retirement from playing for this nation after its defeat by Chile in the 2016 Copa America final, only to return within a few months.

ANSWER: **Argentina**

[10] Another Argentine soccer legend is this mercurial man, who was banned from the 1994 World Cup after testing positive for ephedrine. He scored the "Hand of God" goal in a 1986 World Cup match against England.

ANSWER: Diego **Maradona**

11. This controversial policy prompted Barry Goldwater to say, “You don’t have to be straight to shoot straight.” For 10 points each:

[10] Name this policy enacted by the Department of Defense in 1993 that allowed gay members of the U.S. military to stay in uniform only if they concealed their sexual identity.

ANSWER: **Don’t Ask, Don’t Tell** or **DADT**

[10] This president supported Don’t Ask, Don’t Tell at the time and also signed the Defense of Marriage Act in 1996. He later became involved in a scandal involving a White House Intern, Monica Lewinsky.

ANSWER: William (Bill) Jefferson **Clinton**

[10] This other Clinton scandal led to an FBI investigation into the role of the Clinton family in real estate investments in Arkansas, but resulted in no convictions against the Clintons themselves.

ANSWER: **Whitewater** scandal

12. One work by this artist entitled “Melancholia I” shows a disgruntled-looking angel sitting in front of a magic square. For 10 points each:

[10] Name this German who painted a self-portrait of himself as Jesus and showed two of the title figures threatening the other in “Knight, Death, and the Devil.”

ANSWER: Albrecht **Durer**

[10] Many of Durer’s works are “cut” into this kind of material, which could then be covered in ink to print images to pages in books. This material is used in whittling.

ANSWER: **wood**

[10] In this Biblically-inspired woodcut, Durer depicted the title figures trampling over people while wielding weapons such as a pitchfork, sword, and scales of justice.

ANSWER: “The **Four Horsemen** of the Apocalypse”

13. This character’s adventures have him impressed into the Prussian army, survive the 1756 Earthquake of Lisbon, and visit El Dorado. For 10 points each:

[10] Name this character, who concludes that “We must cultivate our own garden” after experiencing a series of mishaps in a namesake novella.

ANSWER: **Candide**

[10] *Candide* was penned by this French Philosopher of the Enlightenment. He was a prominent critic of organized religion and the French government of his day.

ANSWER: **Voltaire** (or François-Marie **Arouet**)

[10] Candide is taught this positive philosophy from Doctor Pangloss, leading him to have a cheery outlook despite disasters. Leibniz’s version of this belief holds that this is the best world of all possible worlds.

ANSWER: **optimism**

14. This Supreme Court case was instigated because the plaintiff's owner had taken him into free territory. For 10 points each:

[10] Name this 1857 case, which overturned the Missouri Compromise and left all US territories potentially open to slavery.

ANSWER: Dred **Scott** v. Sandford

[10] This chief justice for the case wrote "a negro, whose ancestors were imported into America and sold as slaves," would never be a citizen even if freed and had no right to sue in U.S. Courts.

ANSWER: Roger Brooke **Taney** [TAW-nee]

[10] The 19th Century Court also upheld "separate but equal" as a standard in Plessy v. Ferguson, resulting in this era of segregation in the South. It is named for a stock minstrel character.

ANSWER: **Jim Crow**

15. Answer these questions about the author of the *Principia Mathematica*, for 10 points each.

[10] This English scientist wrote the *Principia*. He has three namesake laws of motion and developed a branch of mechanics often contrasted with quantum mechanics.

ANSWER: Isaac **Newton**

[10] This law can be colloquially phrased as "for each action, there is an equal and opposite reaction." That definition is what leads to this law sometimes being called the action-reaction law.

ANSWER: Newton's **third** law

[10] This other law of Newton's that is not one of his three laws of motion is usually written as a differential equation, and relates the rate of temperature change of an object to the difference in temperature between the object and its surroundings.

ANSWER: Newton's law of **cooling**

16. A sculpture by Praxiteles depicting this god shows him leaning on a tree with a lizard running up it, and is known as "this god" *Sauroktonos*. For ten points each:

[10] Name this Greek god of the sun, music, and poetry. Another sculpture depicting this god shows the nymph Daphne turning into a laurel tree as she attempts to escape from him.

ANSWER: **Apollo**

[10] The aforementioned *Apollo and Daphne* was created by this Italian Baroque sculptor. Other works by this man include a sculpture of a levitating woman about to be pierced by a golden arrow, *The Ecstasy of Saint Teresa*.

ANSWER: Gian Lorenzo **Bernini**

[10] Bernini sculpted the bronze baldacchino as well as the colonnade for St. Peter's Basilica, a cathedral located in this country, the smallest in the world.

ANSWER: **Vatican City** (or the **Vatican** or **Holy See**)

17. This musical work's slow second movement was inspired by the Song of Hiawatha. For 10 points each:

[10] Name this symphony with a geographic nickname inspired by American folklore.

ANSWER: **New World** Symphony (or **From the New World**; accept, but do not reveal **Dvorak's** Symphony **No. 9** in E Minor)

[10] The New World Symphony was composed by this Czech Composer, who was living in America at the time. He also composed the Slavonic Dances.

ANSWER: Antonin Leopold **Dvorak** [duh-VOR-zhack]

[10] Another source of inspiration for the New World Symphony was spirituals such as “Swing Low Sweet Chariot,” an oral tradition of Christian songs passed down by these people in America.

ANSWER: **African-Americans** (accept **slaves** or **black** people)

18. This title character’s story is based on the real-life trials of Alexander Selkirk. For 10 points each:

[10] Name this title character of a novel by Daniel Defoe, who is shipwrecked on an island and remains there for over 28 years.

ANSWER: **Robinson Crusoe**

[10] Crusoe befriends this former cannibal on the island and converts him to Protestantism. This character is named for the day of the week on which Crusoe meets him.

ANSWER: **Friday**

[10] Defoe also wrote this novel, whose title character is born in Newgate Prison and becomes a whore and a thief before finally moving to Virginia and renouncing her criminal ways.

ANSWER: **Moll Flanders**

19. A philatelist studies or collects these objects as a hobby. For 10 points each:

[10] Rare examples of these objects include the 24-cent Inverted Jenny from 1918 and two issued in Mauritius in 1847 featuring Queen Victoria and the phrase “Post Office.”

ANSWER: **stamps**

[10] The H-O and O scales are the most popular scales for models employed in this hobby. Enthusiasts in this hobby often use Digital Command Control to operate multiple engines at once against backdrops.

ANSWER: model **railroads** or model **trains**

[10] A more active hobby is noodling, which involves diving under lakes and sticking hands in the burrows of these fish before wrestling them out of the water using only one’s bare hands.

ANSWER: **catfish**

20. DNA wraps around proteins called histones to form these structures. For 10 points each:

[10] Name these structures made of tightly coiled DNA. Humans have 23 pairs of them.

ANSWER: **chromosomes**

[10] In humans, this chromosome contains the fewest genes and is significantly shorter than its paired chromosome. It is only present in males.

ANSWER: **Y** sex chromosome

[10] Female humans have two X chromosomes, but only one of them is actually active. The other X chromosome is inactive and is known by this name.

ANSWER: **Barr body**