



### PACE NSC 2017 - Round 17 - Tossups

1. The HIV Rev response element forms a complex with the Crm1 protein that localizes to this structure. A group of proteins that form the Y-complex on this structure have consecutive repeats of phenylalanine-glycine. The Ran GTPase shuttles molecules with an NES through this structure with the help of exportin and importin. A common progeria is caused by a defect in the class V intermediate filaments on the interior of this structure, which are called (\*) lamins. This structure has small holes called porins and completely dissolves during prometaphase so that the chromosomes can bind to spindle fibers. This double membrane is continuous with the endoplasmic reticulum. For 10 points, name this envelope that surrounds the cell's genetic material.

ANSWER: nuclear membrane [or nuclear envelope; or nuclear lamina; or NE; prompt on nucleus or word forms] <Silverman>

2. This man's work was corrected by Erasmus Reinhold, the first person to make tables based on his theories. Some of his ideas were first communicated in the *Narratio Prima* by his student, Georges Joachim Rheticus. Thomas Digges translated this man's principle text, which outlines a system that did not rely on the equants, deferents, and eccentrics that had dominated his field since the publication of the (\*) *Almagest*. Andreas Osiander claimed this man's ideas were just a mathematical model to avoid scrutiny from the church. In his 1543 *On the Revolutions of the Heavenly Spheres* he outlined a system of purely circular motion, an idea corrected by Johannes Kepler. For 10 points, name this Polish astronomer who argued for heliocentrism.

ANSWER: Nicolaus Copernicus [or Mikolaj Kopernik] <Bentley>

3. A classic textbook titled for this phenomenon is abbreviated MTW for its three authors. In one theory of this phenomenon, integrating the square of Hamiltonian constraints over induced metrics creates a master constraint. Milgrom proposed a theory in which this phenomenon has a force proportional to the *square* of acceleration. Feynman (FINE-min) hypothesized using beads on a rod to measure the radiation caused by this phenomenon, which today is measured using (\*) interferometers with four-mile arms. LQG and MOND ("mond") are theories of this phenomenon. According to the equivalence principle, this phenomenon is indistinguishable from being in a noninertial reference frame. Another theory equates it with spacetime curvature. For 10 points, name this fundamental force described by general relativity.

ANSWER: gravity [or gravitation; or gravitational force; or gravitational radiation; or gravity waves; or gravitational waves] <Silverman>

4. This letter appears after the hyphen in the name of a constructed language that Kenneth Pike devised to teach the "art of translation." In the 1980s, a theory named for this letter was extended by government and binding theory. In the IPA, this letter represents a voiceless velar fricative. Noam Chomsky argued that all languages share the same underlying binary-branching structure, in which intermediate nodes of a phrase are symbolized by an apostrophe or a line over a letter; that theory is named for (\*) "bar" and this letter. This letter is followed by "h-o-s-a" in the name of a prominent click language spoken in South Africa. In Pinyin, this letter represents the "sh" sound in words such as Xinjiang (sheen-jyong). It derives from the Greek letter chi (kappa). For 10 points, name this twenty-fourth letter of the English alphabet.

ANSWER: X [accept Kalaba-X or X-bar theory] <Jose>

5. Swedish royals were once taken on a "vice tour" of one of these places by "Mayor" Chuck Connors. These places were terrorized by "highbinder" assassins. Some people ended up stranded in these places because the Pacific Mail required certification from the Six Companies that debts had been paid before people could board a ship. The architecture in one of these places was deliberately (\*) exoticized after a scheme to move it away from the city center following a 1906 earthquake. Benevolent organizations in these places helped their mostly male inhabitants put up the 75 dollars necessary to start a laundromat. Tong gangs held power in these neighborhoods, the largest of which was in San Francisco. For 10 points, name these ethnic neighborhoods, often decorated with dragons.

ANSWER: Chinatowns <Bentley>

6. Mabel Dodge ran a salon in this state described as a "garden of Allah". Spiritual landscapes such as *Earth Rhythms No. 6* were made by Transcendental Painting Group member Raymond Jonson in this state. One artist made abstract paintings at the "Black Place" in this state, and painted a pink-heavy landscape called *Red and Yellow Cliffs* near this state's Ghost Ranch. An artist summering in this state mailed back to New York a collection of (\*) bones to create a "Great American Painting". Joseph Henry Sharp, who painted many Native Americans in this state, founded a society of artists that popularized its art colony at Taos (touse). For 10 points, name this state where many paintings of cow skulls in desert landscapes were made by Georgia O'Keeffe.

ANSWER: New Mexico <Bentley>

7. On Crete, Karmanor served as the consort of this deity. Two different stories describe this deity turning either Abas or Ascalabus into a lizard for mocking her eager drinking. She turned the Scythian king Lyncus into a lynx as punishment for attempting to kill a son of King Celeus. This goddess, the older of the two deities celebrated at the Thesmophoria, accidentally consumed the (\*) shoulder of Pelops. After Metanira interrupted a ritual she was carrying out, she opted not to provide immortality to Demophon and instead taught her own skills to Triptolemus. Eleusis was a cult center for this goddess, who supposedly caused winter by spending months grieving for her lost daughter. For 10 points, name this Greek goddess of the harvest, the mother of Persephone.

ANSWER: Demeter [or Ceres] <Carson>

8. This poet described beating an aged beggar's head against the wall, then getting four of his teeth knocked out by that beggar. This author described a "passionate spectator" for whom "the crowd is his element." This poet of "Let's Beat up the Poor!" lamented "the shape of a city changes... quickly, alas!" in a poem about urban renovations titled "The Swan." This author's description of the *flâneur* in "The Painter of (\*) Modern Life" drew on "The Man of the Crowd" by Poe, whom he popularized in Europe with his translations. This poet described the "exquisite monster" of Ennui in a poem addressed to "my likeness, my brother," the reader. The sections "Wine, Death, and Revolt" and "Spleen and Ideal" appear in his masterpiece. For 10 points, name this Parisian poet of *Les Fleurs du Mal*.

ANSWER: Charles Pierre Baudelaire <Brownstein>

9. A character is improbably described as doing this activity while "shouldering thirty battle-dresses," which he does to escape after his uncle is killed. A character describes how he engaged in this activity for seven nights in the "perishing cold," during which he battled and killed nine monsters. In a flyting scene, Unferth notes that the protagonist was defeated in this sort of contest by his childhood friend (\*) Breca. The protagonist uses this mode of traveling to reach the cave of a creature whom he decapitates with a sword made for giants. That hag, whose lair is only accessible by this mode of travel, had a son who terrorized Hrothgar's hall. For 10 points, Beowulf excels at what mode of travel, which he uses to reach the home of Grendel's mother in a lake?

ANSWER: swimming [or diving; accept word forms of either answer] <Brownstein>

10. Topics like "Opposites," "Cases," and "More and Less and Likewise" appear in one tract on this subject. William of Ockham laid out his nominalism in his *Summa* of this subject. The square of opposition is based on a treatise of this subject called *On Interpretation*, which uses a sea battle to illustrate the problem of future contingents. A tree that represents the definition of species in terms of genera and differentia appears in a textbook on this subject, Porphyry's *Isagoge*, which is based on a prior philosopher's (\*) *Categories*. Peter Abelard's work on this subject was inspired by the rediscovery of the *Prior Analytics* from Aristotle's *Organon*, which expounded on non-modal syllogism. For 10 points, name this field of philosophy concerned with deductive reasoning.

ANSWER: logic <Kothari>

11. Two modern-day countries required in your answer. A war which resulted in the independence of one of these countries from the other began with an attack on El Conde Gate and involved members of La Trinitaria. A ruler of one of these countries, Faustin I, repeatedly tried to reverse the independence of the other secured by Juan Pablo Duarte. According to legend, many citizens of one of these countries were murdered by troops from the other when they were unable to (\*) say the word *perejil* (peh-reh-HEEL) in the Parsley Massacre. Towns such as Azua in one of these countries were raided by a general from the other, Jean-Jacques Dessalines (dess-ah-LEEN), during a successful slave rebellion in the early 19th century. For 10 points, name these two countries that share the island of Hispaniola.

ANSWER: Haiti AND the Dominican Republic [accept D.R. or República Dominicana in place of "Dominican Republic"] <Bentley>

**12. A man who breaks plates without touching them opens a factory that produces this stuff, then builds a railroad to improve its business. In a tent, a giant with a copper nose ring opens a pirate chest containing this stuff, which is proclaimed "the greatest invention of our time." A character's only happy moments after his first sight of this stuff occurs while he sits in his workshop crafting tiny (\*) gold fish. A man pays five reals (ree-ALLS) to touch this substance while searching for the gypsy Melquiades. In the first sentence of a 1967 novel, a man facing a firing squad, Colonel Aureliano, recalls when "his father took him to discover" this substance. For 10 points, name this cold substance, a motif in Garcia Marquez's *One Hundred Years of Solitude*, in which it is initially mistaken for diamonds.**

ANSWER: ice [or *el hielo*] <Brownstein>

**13. James Armistead worked under this man as a spy, eventually adopting his last name. He became one of the wealthiest teenagers in his country by marrying the 14-year-old Adrienne de Noailles (no-EYE). Later, he foiled a counter-revolutionary plot led by four hundred noblemen known as the Day of Daggers. He was awarded a government grant of 200,000 dollars during an enormously popular reunion tour in 1824. This head of the National Guard ordered troops to fire on protesters at the (\*) Champ de Mars (shom duh MARCE). He modeled the first drafts of the Declaration of the Rights of Man and of the Citizen on another man's Virginia Declaration of Rights and was wounded in the leg at the Battle of Brandywine. For 10 points, name this French nobleman who served under George Washington in the Revolutionary War.**

ANSWER: Marquis de Lafayette [or Marie-Joseph Paul Yves Roch Gilbert du Motier de Lafayette, Marquis de Lafayette] <Bentley>

**14. Six clarinets play a theme made of minor seconds and thirds at the beginning of this composer's song based on Ernest Dowson's "Seraphita". Tove's (TOH-vuh's) death is related in the "Wood Dove's Song" in a cantata by this man that also depicts an army of the dead being raised by King Waldemar (VAHL-deh-mahr). His first *Chamber Symphony* was part of the program at the riotous *Skandalkonzert*, which he conducted. A poem in which a woman reveals her (\*) pregnancy to a man is the basis for a string sextet by this man that featured a controversial inverted ninth chord. This teacher of Anton Webern and Alban Berg developed a composition method based on fairly ordering the notes of the chromatic scale. *Gurre-lieder* (GURR-uh-LEE-der) and *Transfigured Night* were composed by, for 10 points, what Viennese creator of the twelve-tone technique?**

ANSWER: Arnold Schoenberg [or Arnold Franz Walter Schönberg] <Carson>

**15. In a 1984 book co-written with Ann Druyan, Carl Sagan suggested that Earth is at the heart of over a trillion of these objects. Freeman Dyson's whacky proposal to terraform these things involves growing giant trees inside of them. "Lost" examples of these things include one named for Wilhelm von Biela. The fragmentation of one of these objects was observed by Eugene (\*) Shoemaker and David Levy. One of these things named for the satellite Encke gives its name to a class of them with an incredibly short period. So-called "long-period" ones may originate from the Oort Cloud. These objects typically consist of a central nucleus and a surrounding "coma" or tail. For 10 points, name these astronomical objects, one of which is named for Edmund Halley.**

ANSWER: comets <Jose>

**16. A magazine ad of a man in this profession before a blue sky was manipulated by Richard Prince to become the most expensive retouched photograph ever sold at auction. *Laugh Kills Lonesome* is one of hundreds of paintings of these people by Charles Marion Russell. Franklin Schenck plays a guitar in a Thomas Eakins portrait of a "singing" man in this profession, a trope popularized by Carl T. Sprague. N.C. (\*) Wyeth's *Saturday Evening Post* covers include a depiction of one of these men in profile in front of a setting sun. A bronze statue of one of them based on an 1892 *Harper's* illustration depicts a man with a quirt barely holding onto the reins of the title animal. Frederic Remington's sculpture *Bronco Buster* depicts a man in, for 10 points, what Old West profession?**

ANSWER: cowboys [prompt on Bronco Buster until read; prompt on herder or rancher or wrangler or horse tamer] <Bentley>

**17. In a novel that shares its title with this poem, Dario founds the Edinburgh Fascist Club after immigrating from Sicily to Scotland. Critics argue that a subject of this poem who "embroidered fantails" is a lower-class woman who did her own needlework. Elizabeth Bishop argued that it referred to a practice common among Cuban factory workers. Boys are commanded to "Bring (\*) flowers in last month's newspapers" in this poem, which mentions the "horny feet" of a corpse that "protrude" from under a sheet. This poem from *Harmonium* opens, "Call the roller of big cigars" and bids him to fill "kitchen cups" with "concupiscent curds". For 10 points, name this Wallace Stevens poem about a man preparing sweets.**

ANSWER: "The Emperor of Ice Cream" <Bentley>

**18. An art studio in this country employs 4,000 people to create massive monuments for African capitals, such as the African Renaissance Monument in Dakar. Former leaders of this country lend their names to a red begonia and a purple orchid, the latter of which is displayed during the Day of the Sun. This country is home to the world's largest active stadium, which holds an annual "Mass Games" during the (\*) Arirang Festival. This country's eastern bank on the Yalu River was once nicknamed "MiG Alley." This country claims that one of its leaders was born on Baekdu (PECK-too), a mountain it shares with China, and enforces the official state ideology of Juche (joo-CHEH). For 10 points, name this isolated country that considers its Eternal President to be Kim Il-Sung.**

ANSWER: North Korea [or Democratic People's Republic of Korea; or DPRK; prompt on Korea] <Shimizu>

**19. In medieval England, a "boy bishop" who would act for a roughly three-week period was elected during a holiday commemorating this man. A story recounts how this man encountered a butcher and innkeeper who cut up and pickled three children in barrels, but this man resurrected them. This man, who may have punched the heretic Arius in the face, has a feast day that involves the arrival of Zwarte Piet (ZVARR-tuh PEET), who is controversially depicted in (\*) blackface. To prevent three girls from becoming prostitutes, this bishop of Myra supposedly gave their family three bags of gold. Clement Clark Moore popularized the story of this man through a poem, whose feast day on December 6 often involves giving presents to children. For 10 points, name this saint who was the basis for Santa Claus.**

ANSWER: Saint Nicholas of Myra [or Sint-Nicolaas or Sankt Nikolaus; accept Sinterklaas, Sante Klaas or Santa Claus until "Santa Claus" is read] <Cheng>

**20. Union Carbide's UNIPOL process polymerizes this compound, which reacts with itself over a chromium oxide catalyst in a process developed by the Phillips Company. PVC is made by reacting this compound with chlorine, then polymerizing the product. This compound is the most common product of gasoline steam cracking. Ziegler and Natta first used titanium chloride to polymerize this compound, which forms an atactic polymer classified as either (\*) "low-density" or "high-density" based on its molecular weight. Adding two equivalents of water to this compound makes the glycol in commercial antifreeze. The polyolefin named for this compound is a linear chain of saturated sp<sup>3</sup> carbons and is used in plastic bottles and bags. For 10 points, name this two-carbon alkene.**

ANSWER: ethylene [or ethene; or polyethylene] <Silverman>

**21. An essay argues that the "artificial comedy" of this century occurs in a "utopia of gallantry" unrelated to morality. A work from this century's first year contains a "proviso scene" in which Millamant and Mirabell discuss the terms of their marriage. In a play from this century, Sir Oliver, disguised as a moneylender, is pleased that his nephew refuses to sell his portrait. David Garrick speaks the prologue of a play from this century whose plot is set off by a (\*) prank played at the Three Pigeons alehouse by Tony Lumpkin. Plays from this century include one about the gossip-monger Lady Sneerwell, and one in which Kate Hardcastle is mistaken for a barmaid; those plays are *The School for Scandal* and *She Stoops to Conquer*. For 10 points, name this century when Oliver Goldsmith and Richard Sheridan wrote plays.**

ANSWER: 18th century [or 1700s; prompt on "the last century"] [The first two works are "On the Artificial Comedy of the Last Century" by Charles Lamb and *The Way of the World* by William Congreve.]

<Brownstein>



### PACE NSC 2017 - Round 17 - Bonuses

1. In the 18th century, artists from this city such as Francesco Guardi became renowned for their *vedute* paintings of its landmarks. For 10 points each:

[10] Identify this city, artistic depictions of which often contain several *traghetto* traversing its canals.

ANSWER: Venice [or Venezia]

[10] One master of *vedute*, Canaletto, was so popular with Grand Tourists that he decamped for this city 1746 to be closer to his clients. Canaletto's painting *The Stonemason's Yard* now hangs in this European capital's National Gallery.

ANSWER: London, England

[10] This other Italian artist made a popular series of etchings titled *Vedute di Roma*. Thomas de Quincey wrote admiringly about this artist's *Carceri* series of imaginary prisons.

ANSWER: Giambattista Piranesi <Bentley>

2. A chunk of sodium is dropped into a beaker of water, and it catches fire. For 10 points each:

[10] Name the two products that form in that reaction. You may neglect the solvation of soluble ionic compounds.

ANSWER: hydrogen gas AND sodium hydroxide [or H<sub>2</sub> AND NaOH]

[10] Sodium is extremely reactive because it has a very low value for this quantity, the energy required to remove an electron from an atom.

ANSWER: ionization energy [or ionization enthalpy]

[10] Substances like sodium that are extremely reactive with water are labelled on their NFPA diamonds with this symbol in the white "special notice" field. A description of the symbol is acceptable.

ANSWER: a W with a line drawn through it [or W; or a W with two lines drawn through it; accept answers involving a strikethrough or stroke or bar through the W; prompt on W alone] <Silverman>

3. Identify the following about the confluence of rock music and Communism, for 10 points each.

[10] This country's government promoted the boring Lipsi dance, to which young people responded, "We don't want the Lipsi or Ado Koll." Radio stations in this Erich Honecker-led country would play the government-mandated music early in the morning to give prime-time space to rock and roll.

ANSWER: **East Germany** [or **German Democratic Republic**; or **GDR**; or **Deutsche Demokratische Republik**; or **DDR**; do not accept or prompt on "Germany"]

[10] East Germans attended rock concerts put on at these types of buildings until the concerts were banned in the 1980s. One of these buildings named for "Christ the Savior" in Moscow was demolished in 1931 during the Soviet anti-religious campaign.

ANSWER: **churches** [or **cathedrals**]

[10] This underground Czech rock band formed in the aftermath of the Prague Spring. English-speaking Paul Wilson was its lyricist and frontman in its early days.

ANSWER: **Plastic People of the Universe** [or **PPU**] <Bentley>

4. The author of an essay on this action is unable to use his "understanding" to ascertain why he's so affected by it before concluding that it represents "the pulse of life beginning to beat again." For 10 points each:

[10] Identify this sound, the subject of a Thomas de Quincey essay, which is heard in Act 2 Scene 3, and is attributed by a drunk man to a hanged farmer or an English tailor.

ANSWER: the **knocking** at the gates in *Macbeth*

[10] The knocking at the gate in Act II of *Macbeth* is done by Lennox and this other character. Since he was "from his mother's womb untimely ripped," this thane of Fife is able to kill Macbeth.

ANSWER: Lord **Macduff**

[10] The three witches tell Macbeth that he will be king, but that his children will not; instead, they prophesy that the descendants of this son of Banquo will rule Scotland.

ANSWER: **Fleance** (**FLAY**-ahnts) <Bentley>

5. Chapter 12 of Leviticus describes how two of these specific animals would be sacrificed to purify a woman after she underwent childbirth. For 10 points each:

[10] Name these birds that are often used to symbolize the Holy Spirit. One appeared during the baptism of Jesus.

ANSWER: **doves** [accept **yonah** or **yonim**]

[10] A dove appeared to Noah carrying a branch after this event, which lasted for forty days and forty nights. Two of each animal survived this event by riding Noah's Ark.

ANSWER: the Biblical **Flood** [accept synonyms like **deluge**]

[10] In this minor prophet's namesake book, he compares Ephraim to a "silly dove without heart." This prophet is described as being married to the "harlot" Gomer.

ANSWER: **Hosea** [or **Hoshea**] <Jose>



6. This author's non-fiction includes the book *We Should All Be Feminists* and her TED talk "The Danger of a Single Story." For 10 points each:

[10] Name this African novelist who wrote the novels *Purple Hibiscus* and *Half of a Yellow Sun*, and the story collection *The Thing Around Your Neck*.

ANSWER: Chimamanda **Adichie** (uh-DEE-chay)

[10] Adichie's most recent novel is this 2013 work about Ifemelu, who moves to the United States and writes the popular blog "Raceteenth."

ANSWER: **Americanah**

[10] Adichie is from this West African country, whose civil war she depicted in *Half a Yellow Sun*. The author of *Death and the King's Horseman*, Wole Soyinka (WALL-ay SHOW-ying-ka), is an ethnically-Yoruban (YORE-oo-bin) playwright from this country.

ANSWER: **Nigeria** <Brownstein>

7. According to a 2017 *Slate* article, Daryl Bem's publication of a 2011 long-term study of extrasensory perception fed directly into the so-called "crisis" of this objective. For 10 points each:

[10] Give this term for an attempt by researchers in empirical academic disciplines to completely redo earlier experiments in order to verify them. Psychology is thought to have a particularly high failure rate for this objective.

ANSWER: **replication** [or **replicability**; accept answers like **replication** studies or **replication** experiments; prompt on **reproduction** or **reproducibility**]

[10] Diederik Stapel, a perpetrator of academic fraud in social psychology, wrote about the physical environment's effect on this attitude, a simplified generalization particularly applied to race. This attitude's namesake "threat" includes instances in which black students do worse on standardized tests after being reminded that they do worse on average.

ANSWER: **stereotype** [or **stereotyping**]

[10] Some studies cannot be replicated for ethical reasons, like this early 1960s experiment in which a Yale psychologist had participants administer fake shocks to word pair learners.

ANSWER: Stanley **Milgram** experiment on **obedience** to authority figures [or obvious equivalents; prompt on partial answer] <Aggarwal>

8. In 1989, Stanley Fleischmann and Martin Pons claimed to have successfully initiated this process, though their work has been repeatedly debunked. For 10 points each:

[10] Name this theoretical process of combining atomic nuclei at relatively low temperatures.

ANSWER: **cold fusion** [prompt on **fusion**]

[10] The original cold fusion announcement by Fleischmann and Pons claimed that electrodes of this element would absorb deuterium nuclei and force them to fuse. Both the Heck reaction and the Suzuki coupling are catalyzed by a complex of this element.

ANSWER: **palladium** [or **Pd**]

[10] The U.S. Patent Office rejects all patent applications for only two specific types of ideas without a working model: one is cold fusion, and the other is this kind of device, an example of which is the Brownian ratchet.

ANSWER: **perpetual motion** machines <Jose>

9. Identify the following about some pioneering female world leaders, for 10 points each.

[10] The first female elected head of state in a modern democracy was Sirimavo Bandaranaike, who became Prime Minister of this country in 1960. The Tamil Tigers sought an independent state from this island country.

ANSWER: Sri Lanka [or Ceylon]

[10] Janet Jagan (**JAY-gan**) became the first American-born woman to serve as president when she was elected in 1997 in this Latin American country with a significant Hindu population.

ANSWER: Guyana

[10] This African country currently ranks first on the Inter-Parliamentary Union's list of the greatest proportion of women in national legislatures. A plane carrying President Juvénal Habyarimana of this country was shot down in 1994.

ANSWER: Rwanda <Bentley>

10. One way to formulate the hierarchy problem is to ask why this quantity is so small compared to the Planck scale for it. For 10 points each:

[10] Name this quantity, which is roughly equal to the vacuum expectation value for a field that is unusually finite at the origin and allows the breaking of electroweak symmetry. It equals around 126 giga-electron volts.

ANSWER: mass of the Higgs boson [or mass of the Higgs particle; or Higgs mass; or mass-energy of the Higgs boson; prompt on partial answer; prompt on energy of the Higgs boson]

[10] You can convert the mass of the Higgs boson in energy units to standard SI kilograms by dividing by what specific constant? It is also the ratio of a nucleus's binding energy to its mass defect.

ANSWER: c-squared [or the speed of light squared; do not accept or prompt on just "c" or "speed of light"]

[10] The result of that calculation is that the Higgs boson is roughly 100 times as massive as this hadron, which is found with neutrons in atomic nuclei.

ANSWER: proton <Silverman>

11. Its final book begins with Numa Pompilius going to Crotona, where he hears a story about the trial of Myscelus and then learns about the principles of the universe from Pythagoras. For 10 points each:

[10] Name this 15-book poem by Ovid that recounts hundreds of different myths. Its namesake theme is exemplified by such stories as Cadmus choosing to transform into a snake.

ANSWER: the Metamorphoses

[10] Later in the final book of the *Metamorphoses*, the Muses tell Ovid about a Roman embassy sent to borrow a statue of this god from his temple at Epidaurus. This son of Apollo and Coronis was the god of healing until he was struck down by Zeus for raising Hippolytus from the dead.

ANSWER: Asclepius [or Aesculapius]

[10] The final transformation described before the epilogue is this event, which involves Jupiter asking Venus to turn a certain figure's soul into a star.

ANSWER: the apotheosis of Julius Caesar [accept descriptive answers, like Julius Caesar turning into a god or being raised to the heavens; prompt on partial answers] <Carson>

12. The worst terrorist bombing in the United States since the Wall Street bombing was carried out in 1975 by the FALN, which agitated for this cause. For 10 points each:

[10] Identify this cause. One supporter of this cause, Griselio Torresola, was mortally shot by a Secret Service agent near Blair House in Washington, D.C.

ANSWER: **Puerto Rican independence**

[10] The aforementioned Griselio Torresola unsuccessfully tried to assassinate this US President. This man ordered the dropping of the atomic bombs on Japan.

ANSWER: Harry S. **Truman**

[10] A law with this nickname passed by the Puerto Rican Senate in 1948 made it a crime to display the Puerto Rican flag. John Quincy Adams was a tireless opponent of a Congressional rule of this name.

ANSWER: **Gag** Law [or **Gag** Rule; or Ley de la **Mordaza**] <Bentley>

13. The Antarctic icefish has lost these cells in an attempt to save energy, since these cells are responsible for making blood a non-Newtonian fluid. For 10 points each:

[10] Name these cells that are full of hemoglobin to transport oxygen in the blood.

ANSWER: **red blood** cells [or **RBCs**; or **erythrocytes**; or **reticulocytes**]

[10] In mammals, mature red blood cells, or reticulocytes, possess this unusual structural feature, an evolutionary consequence of trying to fit as much hemoglobin in a cell as possible. It prevents red blood cells from making proteins.

ANSWER: **anucleate** [or they have **no nucleus**; or they have **no DNA**; or similar answers]

[10] Immature red blood cells do have nuclei, since they derive from this class of progenitor cells.

Hematopoietic stem cells will differentiate down either this lineage, which also includes platelets and neutrophils, or the lymphoid lineage.

ANSWER: **myeloid** progenitor cells [or **myeloid** lineage] <Silverman>

14. A set of three texts on this discipline called the *Trotula* were attributed to a woman named Trota. For 10 points each:

[10] Name this discipline that Constantine the African taught at the University of Salerno, the first school where it was taught in medieval Europe. Later practitioners of this discipline used books by Andreas Vesalius and William Harvey.

ANSWER: **medicine** [or **surgery**; or **anatomy**; or **healing**; or **health**]

[10] Because of Salerno's reputation for medicine, it became known as the city of this ancient Greek physician, the namesake of an oath often taken by doctors.

ANSWER: **Hippocrates**

[10] The 1231 Edict of Salerno issued by this king defined the occupations of physician and apothecary. This Holy Roman Emperor was excommunicated four times by popes such as Gregory IX, led the peaceful Sixth Crusade, and was called "Stupor Mundi" for his erudition.

ANSWER: **Frederick II** [prompt on **Frederick**] <Kothari>

15. Mieczysław Weinberg's (MYEH-chih-swaff VINE-berg's) Symphony No. 21 is subtitled for this term, which also titles the first song of Maurice Ravel's *Deux Mélodies Hébraïques* (may-loh-DEE ay-brah-EEK). For 10 points each:  
[10] Give this term for a type of hymn or prayer that also titles a 1963 symphony for orchestra, choir, boys' choir, soprano soloist, and narrator that was dedicated to the recently-assassinated John F. Kennedy.

ANSWER: Kaddish [accept Kaddish Symphony]

[10] The *Kaddish Symphony* is by this American composer, whose first two symphonies are subtitled "The Age of Anxiety" and "Jeremiah". He also wrote the music for *West Side Story*.

ANSWER: Leonard Bernstein (BURN-styne) [or Louis Bernstein]

[10] Bernstein's *Prelude, Fugue, and Riffs* was composed for a jazz ensemble featuring a soloist playing this woodwind instrument. Woody Herman, who played this instrument, commissioned Stravinsky's *Ebony Concerto* for it.

ANSWER: clarinet <Carson>

16. The protagonist of this novel befriends a violin-playing soldier named Lieutenant Gerhardt, and falls in love with his childhood friend Enid Royce as he recovers from a skin disorder aggravated by a facial cut. For 10 points each:

[10] Name this Pulitzer-winning novel about Claude Wheeler, who dies on a French battlefield during the First World War.

ANSWER: One of Ours

[10] This author of *One of Ours* wrote about Bohemian immigrants to her native Nebraska in *My Ántonia*.

ANSWER: Willa Cather [or Willa Sibert Cather]

[10] In *One of Ours*, Claude's engagement with Enid collapses when she attends to her sick sister, who serves in this capacity. This is the occupation of the *parents* of the author who chronicled the fortunes of Wang Lung in *The Good Earth*.

ANSWER: American missionary in China <Gupta>

17. Since 1992, this event's board of directors has included Clint Eastwood, and he filmed parts of his movie *Play Misty for Me* at this event. For 10 points each:

[10] Name this jazz festival held every September in a namesake town in California.

ANSWER: Monterey Jazz Festival

[10] The first Monterey Jazz Festival, held in 1959, featured music by this trumpet player and his "All-Stars". This performer of "Hello, Dolly!" was nicknamed "Satchmo".

ANSWER: Louis Armstrong [prompt on Satchmo]

[10] The original Monterey Jazz Festival's lineup also included Gerry Mulligan, who played this instrument in Miles Davis's band. Other players of this instrument's baritone form include Pepper Adams.

ANSWER: baritone saxophone [or bari sax] <Jose>

18. In a short story set in this city, the protagonist shoots the driver of an armored car and the old woman who'd informed on him. For 10 points each:

[10] Name this city, the setting of the short story "The Sniper," in which the title character uses a ruse involving his hat to kill his enemy on the other side of the street.

ANSWER: Dublin, Ireland

[10] Like Liam O'Flaherty's "The Sniper," this Irish playwright's *Juno and the Paycock* is set during the Irish Civil War, and is part of his Dublin Trilogy with *The Shadow of a Gunman* and *The Plough and the Stars*.

ANSWER: Sean O'Casey [accept John Casey or Seán Ó Cathasaigh]

[10] The story's last sentence, in which the sniper finds that the enemy he killed is his brother, exemplifies this plot device. This literary device hinges on an unexpected revelation at the narrative's conclusion.

ANSWER: twist ending [or surprise ending] <Brownstein>

19. These laws of propositional logic can be used to establish the equivalence of search criteria using NOT, AND, and OR. For 10 points each:

[10] Name these rules of inference that can be stated set-theoretically as "the complement of the union of  $A$  and  $B$  is equal to the intersection of  $A$ -complement and  $B$ -complement," and "the complement of the intersection of  $A$  and  $B$  is equal to the union of  $A$ -complement and  $B$ -complement."

ANSWER: **De Morgan's** laws

[10] De Morgan's laws feature prominently in mathematical logic and the branch of algebra described by this adjective. This adjective, based on the name of an English mathematician, also names a data type in many programming languages that evaluates only to true or false.

ANSWER: **boolean**

[10] The Boolean Satisfiability problem is [this complexity class]-complete. A famous unsolved problem in complexity theory asks whether every problem in this complexity class can be proven in polynomial time.

ANSWER: **NP** [or **NP**-complete; or **nondeterministic polynomial** time; do NOT accept or prompt on "polynomial" or "non-polynomial" or "P"] <Aggarwal>

20. A plurality of these places are used for undocumented immigrants. For 10 points each:

[10] Identify these locations operated by companies such as CoreCivic. Stocks in companies operating them shot up following the November 2016 election on the assumption that the Trump administration would reverse Obama-era policies closing this specific type of detention facilities.

ANSWER: **privately** operated **prisons** [or **for-profit prisons**]

[10] The July and August 2016 issue of this magazine was devoted to Shane Bauer's stint going undercover in a private prison. This magazine also published Mitt Romney's "47 percent" tape.

ANSWER: ***Mother Jones***

[10] In 2013, *Mother Jones* reported that this organization had invested over two million dollars in the GEO Group, which runs private prisons. This organization began receiving the first of some 10 million Berkshire Hathaway shares in 2006.

ANSWER: The Bill & Melinda **Gates** Foundation <Bentley>

21. Bipolar disorder is characterized by phases of mania and phases of this other condition. For 10 points each:

[10] Name this psychological condition characterized by anxiety and loathing. It is often treated with benzodiazepines.

ANSWER: **depression** [or **depressive**]

[10] Depression that occurs after a mother has undergone this kind of event is called postpartum depression. A 1924 book by Otto Rank argues that undergoing this process is inherently traumatic for the child.

ANSWER: child**birth** [accept **labor** or *The Trauma of Birth*]

[10] This psychologist's namesake "Depression Inventory" consists of around 20 questions that are used to diagnose if a patient has depression. He also pioneered cognitive therapy.

ANSWER: Aaron Temkin **Beck** [accept the **Beck** Depression Inventory] <Jose>