



PACE NSC 2017 - Round 14 - Tossups

1. *Wolbachia* (wole-BACK-ee-uh) bacteria, which were first discovered in these animals, cause their males to turn female. The British company Oxitec controversially engineers sterile males of these animals. These animals are, by far, the most common target of CRISPR ("crisper") gene drives, such as one proposed in 2016 to protect Hawaiian birds. A new vaccine called RTS,S (R-T-S-S) targets sporozoites (spore-uh-ZOH-ites) that originally form in this animal's salivary glands, but which turn into hypnozoites (hip-no-ZOH-ites) in the (*) human liver and trophozoites (troh-fuh-ZOH-ites) in blood cells. The Asian tiger species of these animals is invasive. These animals are in the genera *Aedes* and *Anopheles*, the latter of which serves as an intermediate host to *Plasmodium falciparum*. For 10 points, name these vectors that transmit yellow fever, Zika (ZEE-kah), and malaria.

ANSWER: mosquitoes [or Anopheles mosquitoes; or Aedes mosquitoes; or specific species names; prompt on insects; prompt on dipterans or similar answers] <Silverman>

2. This is the first noun in the title of a novel in which the protagonist travels to America and works at a Ford factory after burning down his African trading post in a malarial fever. *Death on the Installment Plan* is a sequel to a novel about Ferdinand Bardamu titled for one of these events "to the end of the night" by Louis-Ferdinand (*) Céline. In another novel titled for one of these events, the characters find the initials of the alchemist Arne Saknussemm on a rock after watching a twelve-foot tall Tertiary man herding some mastodons. In that novel titled for an event of this sort, a raft bearing Axel and his uncle Otto Lidenbrock is shot out of Mt Etna after entering a volcano in Iceland. For 10 points, Jules Verne wrote a novel titled for what sort of event "to the Center of the Earth"?

ANSWER: journeys [or voyages] <Brownstein>

3. A passage often used to introduce cultural relativism describes how this king called in people of the Callatian tribe to tell some Greeks about their practice of eating their dead parents. *The Periplus of Pseudo-Scylax* is named for an explorer sent by this king to explore the Indus River. After his predecessor died of gangrene, this king and six other nobles assassinated a magician pretending to be Bardiya named Gaumata, an event described in his (*) cliff-face Behistun Inscription. After suppressing the Ionian Revolt, this successor of Cambyses II launched a campaign which burnt Eretria, but was stopped by Miltiades at a battle followed by Pheidippides's run to Athens. For 10 points, name this Persian king whose troops lost at Marathon, the predecessor of Xerxes I.

ANSWER: Darius I [or Darius the Great] <Brownstein>

4. In one play titled for this time period, the casino owner Mr. Gonzales shoots the father of a doctor who demands that a woman point to the soul on an anatomy chart. In another play titled for this time period, Violet describes seeing birds pick apart newborn Galapagos turtles, foreshadowing how poor Spanish children cannibalize her son Sebastian. Along with "smoke," this time period titles a play by Tennessee (*) Williams, who wrote another play in which it follows the words "Suddenly Last." The opening sentence of *The Bell Jar* describes a "queer" instance of this time period when "they killed the Rosenbergs." The poem "Tithonus" laments that "after many" instances of this season "dies the swan." For 10 points, name this season, which is less "lovely" and "temperate" than the addressee of Shakespeare's Sonnet 18.

ANSWER: summer [or last summer; or summer's day] <Bollinger>

5. Supplicants would drink from two rivers before entering one of these places to be scared out of their wits in the cult of Trophonius. These places are referred to as "windows" in accounts of how four brothers and four sisters left one of them called Pacaritambo and wandered until Manco Capac's staff sunk into the ground. The clashing spears of the dancing Kuretes drowned out the cries of a child in one of these places, where he was suckled by the (*) goat Amalthea. After her brother throws a flayed horse at her, a goddess hides in one of these places until Uzume's (oo-ZOO-may's) tub-dance lures her out. Amaterasu hid in one of these places, and one on Mount Ida was where Rhea hid the infant Zeus. For 10 points, what natural features were often thought to be entrances to the underworld?

ANSWER: caves [prompt on mountains] <Brownstein>

6. The hybrid pi and T models describe these objects when they receive small signals. Pinch-off in these devices is quantified by a channel-length modulation parameter symbolized lambda and a transconductance symbolized g. An old type of these devices is diagrammed using a circle intersected by three pins labelled C, B, and E. These devices' characteristic curves converge to a steady-state value on an I-V diagram that is separated into an active region, a cutoff region, and a (*) saturation region. One type of these objects is named because it has two sets of junctions separating the base, collector, and emitter; however, nowadays, the most common type of them are MOSFETs. For 10 points, name these electronic devices that can either amplify currents or act as switches.

ANSWER: transistors [or bipolar junction transistors; or BJTs; or field effect transistors; or FETs; or MOSFETs or metal-oxide-semiconductor field effect transistor until it is read] <Silverman>

7. In this country, the firm Apollo Architects created the Ark House, whose pointed roof was inspired by Noah's Ark. Many umbrella-shaped houses from this country's medieval period are called *minka*. The 2014 Pritzker Prize went to a "disaster architect" from this country who used paper tubes for a church in this country that was later moved to Taiwan, and who created the Cardboard Cathedral in New Zealand. Carved Oya stone was used in the facing of a (*) Maya Revival building in this country that had a foundation designed to "float" on alluvial mud. Renzo Piano designed an airport on an artificial island in this country, the former home of Frank Lloyd Wright's Imperial Hotel. For 10 points, Shigeru Ban is from what country, whose tallest structure is the Skytree in its capital, Tokyo?

ANSWER: Japan [or Nihon-koku; or Nippon-koku] <Jose>

8. The brother of a ruler of this country died while defending that ruler's residence of Dasman Palace. More than 100,000 people were airlifted out of this country by Air India. This country's government ruled from a neighbor's city of Dhahran after tensions with another neighbor arose over territory in Rumaila. This country contains the southern end of Highway 80, where thousands of an invading military's abandoned tanks earned it the nickname (*) "Highway of Death." Armored divisions named after Medina and Hammurabi invaded this country, and set hundreds of its oil wells on fire during their retreat from forces led by Norman Schwarzkopf. For 10 points, name this small country whose invasion by Saddam Hussein led to the Gulf War.

ANSWER: Kuwait [or State of Kuwait; or Dawlat al-Kuwait] <Shimizu>

9. Three walls of an exhibit hall in this country were decorated with a motif including a femme fatale in three-quarter profile representing Lasciviousness and depictions of Typhon and his daughters by an artist who later taught the painter of *Portrait of Wally*. The magazine *Ver Sacrum* was produced by an art movement from this country, also the birthplace of an artist who depicted himself staring into space while his mistress, a (*) composer's widow, sleeps next to him. Egon Schiele and *Bride of the Wind* painter Oskar Kokoschka were from this country. An artist from this country painted multiple portraits of Adele Bloch-Bauer that, like his *The Kiss*, make heavy use of gold leaf. For 10 points, name this home country of Gustav Klimt, a leader of the Vienna Secession.

ANSWER: Austria [or Austro-Hungarian Empire; or Austria-Hungary; do not accept or prompt on "Hungary" alone] [The first work is Klimt's *Beethoven Frieze*.] <Bentley>

10. In *On the Genealogy of Morals*, Nietzsche asks "Who is right – [this man] or Stendhal?" in ridiculing this man's assertion that beautiful things give satisfaction without interest. This philosopher argued through genius, "nature gives the rule to art," and compares its role in producing art to that of taste in evaluating it. He listed the good, agreeable, beautiful, and sublime as the four reflective judgments of (*) aesthetics. In another work, this philosopher enacted a "Copernican revolution" in philosophy by distinguishing the unknowable noumenon from the sensible phenomenon. That work outlines his transcendental idealism and distinguishes analytic and synthetic judgments. For 10 points, name this author of the *Critique of Judgment* and the *Critique of Pure Reason*.

ANSWER: Immanuel Kant <Kothari>

11. Mark Burgin discussed "inductive" types of these things in an article that treats their process of generating "words" as closely resembling the task of calculating a real number to a desired precision. The Kolmogorov complexity of an input is formally defined as the simplest number of states used to encode that input in these models, which are formally defined with a 7-tuple. Treating these things as black boxes, or (*) "oracles", is often done in proofs that make use of polynomial-time reductions. The namesake of these things determined that asking if they halt is undecidable. A head that reads and writes bits on an infinite tape is one component of, for 10 points, what entities that closely model computers, and which are named for a British computer scientist?

ANSWER: Turing machines [prompt on machines or abstract machines or abstract computers] <Jose>

12. This is the largest company involved in a study by MIT professor Christopher Knittel that linked minority customers to poorer service in its industry. Eric Holder and Arianna Huffington investigated a claim by Susan Fowler against this company, forcing its executive Amit Singhal to resign. This company used a method to track law enforcement officers and rivals who use their services called (*) "greyballing". Dan O'Sullivan coined a hashtag opposing this company after it chose to serve customers during an anti-travel ban protest at JFK Airport by turning off surge pricing; in the fallout from that protest, this company's CEO Travis Kalanick left Donald Trump's advisory council. For 10 points, name this ride-share service that competes with Lyft.

ANSWER: Uber Technologies Inc. [accept "#deleteUber"] <Shimizu>

13. Balls of rice and barley called *pinda* are often used in rituals that take place near this landmark. In March 2017, this was the larger of two landmarks that was given the legal status of "human being" by Judge Rajeev Sharma. Naked ascetics called *Naga Sadhus* dance during the Peshwai Procession that occurs during a triennial festival that takes place nearby this landmark. According to legend, one of the first (*) *kamandalu* was used to create this landmark, which is said to have originated from the toe of Vamana. Millions visit this landmark during the Kumbh Mela festival in Haridwar. Many *ghats*, or staircases, have been built in cities like Varanasi to provide access to this place. For 10 points, name this sacred river worshiped by Hindus.

ANSWER: Ganges [or Ganga] <Jose>

14. This port's maritime trade increased with a navy built by Manuel Pessanha of Genoa under orders of Denis the Farmer King. This city's overseas trade, which was managed by the India House, included the wine it exported to England due to the Methuen Treaty. This city ceased to be a capital of an independent country after a 1580 War of Succession, which followed the death of a "desired" king in Morocco. Its Pombaline style buildings were erected by the Marquis of (*) Pombal, who managed this city following a natural disaster. A 1668 treaty signed in this city assured the sovereignty of its ruling House of Braganza. For 10 points, name this city which suffered a devastating earthquake in 1755, the capital from which trade with colonial Brazil was controlled.

ANSWER: Lisbon [or Lisboa] <Bentley>

15. Patrick Geddes pioneered the field studying the design of these places. According to a 1961 book examining them through history, these places were ideal during the Middle Ages, when they were "organic." Another theorist studying these places, Jane Jacobs, opposed Robert Moses's efforts to remake one of them. Napoleon III ordered a renewal effort targeting one of these places led by (*) Baron Haussmann. They're not banks, but in 20th century America, redlining was practiced by these places to deny services to minorities, and these places are also divided into areas of distinct usage by zoning laws. The phenomenon of sprawl from these places' centers results in the formation of suburbs. For 10 points, name these large areas of human habitation, exemplified by Boston and Chicago.

ANSWER: city [or cities; or municipality; prompt on urban areas; antiprompt on suburbs before mention] <Aggarwal>

16. This poet declared that "two poetries are ever competing, a cooked and a raw" in an acceptance speech for a 1960 National Book Award. This author wrote a poem that declares "the season's ill" because "we've lost our summer millionaire, who seemed to leap from an L. L. Bean catalogue." That poem, which is dedicated to Elizabeth Bishop, declares that "nobody's here" except an animal that "drops her (*) ostrich tail, and will not scare." The speaker of another poem by this writer contemplates the shuttered South Boston Aquarium before reflecting that a Saint-Gaudens relief "sticks like a fishbone in the city's throat." A review of this man's *Life Studies* first described poetry as "confessional." For 10 points, name this author of "Skunk Hour" and "For the Union Dead."

ANSWER: Robert Lowell [or Robert Traill Spence Lowell IV; or "Cal" Lowell] <Kothari>

17. "Pigs" and "castles" named for this element are often used to follow the ALARA (uh-LARR-uh) safety protocols. Double contrasting in electron microscopy uses this element's citrate in combination with uranyl acetate. Either silver or this metal is added to detect iodide in solution since it forms a yellow precipitate. Because of the inert pair effect, this element in the carbon group has a more stable plus-two oxidation state than (*) plus-four. This element is both oxidized and reduced by sulfuric acid in the oldest type of rechargeable galvanic cell. Because its 208-isotope is doubly magic, the thorium and uranium decay series both end on this element. Galena is an ore of it. For 10 points, name this toxic metal often used in radiation shielding, which has the symbol Pb.

ANSWER: lead [or Pb until it is read] <Silverman>

18. Two answers required. One of these men controversially shook hands rather than saluted the other at the Wake Island Conference. These two men disagreed over a plan to create a giant belt of radioactive cobalt and drop 26 atomic bombs. Following a conflict between these two men, one of them gave a speech to Congress that warned of "any major breach" in the "littoral (*) defense line in the western Pacific" and which concluded, "old soldiers never die; they just fade away". One of these men refused a request from the other to allow forces from Taiwan to be used or to bomb mainland China. The conflict between these two men led one to be replaced with General Matthew Ridgeway. For 10 points, name these two men, one of whom was the President who relieved the other from command during the Korean War.

ANSWER: Harry S. Truman and Douglas MacArthur <Bentley>

19. A composition with this nickname opens its finale with a soprano soloist singing a wordless pentatonic melody over a drumroll, and features a second-movement trumpet cadenza inspired by its composer hearing a bugler accidentally play a harmonic seventh. Another composition with this nickname unusually features two trio sections in its scherzo movement. Ralph Vaughan Williams's (rafe von Williams's) third symphony has this nickname. This is the nickname of a five-movement piece whose second movement features a cadenza for four (*) woodwinds representing different bird calls that opens with a pair of muted cellos playing a "flowing water" motif. Movements titled for a thunderstorm and a shepherds' song end Beethoven's Sixth Symphony, which is known by, for 10 points, what nickname, indicating its depiction of a rural setting?

ANSWER: (*A* or *The*) Pastoral Symphony [prompt on Symphony No. 3 or Third Symphony until read; prompt on Symphony No. 6 or Sixth Symphony until read] <Carson>

20. One of this author's characters exclaims "Oh, this feeds my soul!" while the seven deadly sins parade before him. A later author may have added comic scenes featuring the ostler Robin to a play by him, in which magical events such as a horse turning to straw and a knight's head sprouting antlers occur at the court of the German Emperor. In a play by this author, good and evil angels fight over a character who is visited by the (*) scholars Valdes and Cornelius. The title character of one of his plays asks "Was this the face that launch'd a thousand ships?" after summoning the shade of Helen with the help of Mephistopheles, who drags him to hell in the last scene due to a contract he signed. For 10 points, name this playwright of *Doctor Faustus* who wrote about Barabbas in *The Jew of Malta*.

ANSWER: Christopher Marlowe [or Kit Marlowe] <Brownstein>

21. A Parliament named for these people agreed to a suspension of the king's debt known as the Stop of the Exchequer. The longest serving Parliament in English history was named for these people and passed laws such as the Act of Uniformity that constituted the Clarendon Code. A general who typified the fashions of this group was always accompanied by his allegedly-demonic poodle Boye and was a Count Palatine of the Rhine named Prince (*) Rupert. Richard Lovelace was part of a school of poets named for this group. The long hair and extravagant dress of these people contrasted with the puritanical habits of their opponents in such battles as Edgehill and Naseby. For 10 points, name these enemies of the Roundheads and supporters of King Charles I in the English Civil War.

ANSWER: Cavaliers [prompt on Royalists] <Bentley>



PACE NSC 2017 - Round 14 - Bonuses

1. In an update to one of these types of works in the 1970s, the title *Tiger's Bride* is licked so thoroughly that her skin gives way to animal fur. For 10 points each:

[10] Identify these types of works that provided the source material for Angela Carter's *The Bloody Chamber*. The Aarne–Thompson indices are used to classify them.

ANSWER: fairy tales [or folk tales; accept folklore]

[10] Two brothers with this last name collected German folk tales such as "Hansel and Gretel" into their book *Children's and Household Tales*, which is more often known in English by their name.

ANSWER: Grimm [or Brothers Grimm; or Bruder Grimm; or the Grimms; accept Grimms' Fairy Tales]

[10] Angela Carter also wrote her own take on Puss-in-Boots, a character first brought to a wide readership by this French author. This member of the Académie française also popularized *Sleeping Beauty* and *Little Red Riding Hood*.

ANSWER: Charles Perrault <Bentley>

2. Due to the vagaries of British copyright law, this work was premiered without any prior promotion for one night only at the tiny Royal Bijou Theatre in Paignton a few hours prior to its grander premiere in New York. For 10 points each:

[10] Identify this operetta whose plot hinges on one of the major characters being born on February 29. One of its characters claims to have "information vegetable, animal, and mineral", but is ironically unable to "tell at sight a Mauser rifle from a javelin".

ANSWER: *The Pirates of Penzance*; or, *The Slave of Duty*

[10] *The Pirates of Penzance* was one of several comic operas created by this duo, who also teamed up for *H.M.S. Pinafore* and a dozen other comic operas.

ANSWER: W. S. Gilbert AND Arthur Sullivan [or William Schwenck Gilbert AND Arthur Seymour Sullivan]

[10] In his eponymous song, the Major General brags that he can "quote the fights historical... in order categorical" ranging from one of these two battles to the other one.

ANSWER: "from Marathon to Waterloo" <Bentley>

3. Laguerre's method is very effective for this goal because it can yield an answer from virtually any starting position. For 10 points each:

[10] Name this task that can also be accomplished by recursive application of Newton's method. A "rational" theorem constrains the values that need to be found for this task, and the Abel–Ruffini theorem states that finding a general formula for this task is impossible when the degree is five or greater.

ANSWER: **root-finding** [or **finding the roots** of a polynomial; or obvious equivalents like "**finding a solution** to a polynomial"; accept **zeroes** in place of "roots"]

[10] Newton's method repeatedly takes the first few terms of this power series that expands about a point a such that f -of- x equals " f -of- a , plus f -prime-of- a times the quantity x -minus- a , et cetera." When a equals zero, it becomes the Maclaurin series.

ANSWER: **Taylor** series

[10] Laguerre's method uses this function and its derivatives during root-finding applications. The Mercator series is the Taylor series expansion of this function.

ANSWER: **natural logarithm** [or **ln**; prompt on **logarithm**; prompt on **log**] <Aggarwal>

4. This god rode a boat variously known as the Atet, the Mesekhtet, or the Mandjet in a 24-hour trip that passed through Duat, the underworld. For 10 points each:

[10] Name this sun god, who at various times in Egyptian history was merged with Horus and Amon or suppressed in favor of Aten.

ANSWER: **Ra** [or **Re**]

[10] During his passage through the underworld, Ra was assisted by various deities in fighting off the attacks of this chaotic deity, often depicted as a gigantic serpent.

ANSWER: **Apep** [or **Apophis**]

[10] In some versions of the myth of Ra's journey, he entered the underworld in the form of Atum, the setting sun, and exited it in the rising-sun form of this scarab-headed god, who rolled the sun across the sky the same way a scarab rolls dung balls.

ANSWER: **Khepri** [or **Khepera**; or **Khepra**] <Carson>

5. Answer the following about Mesoamerican agriculture, for 10 points each.

[10] This crop was the tallest of the "Three Sisters" grown by many Mesoamerican cultures. Stone tools called the *mano* and *metate* were used by the Maya, among others, to grind this crop.

ANSWER: **maize** [or **corn**]

[10] These rectangular parcels of land, often nicknamed "floating gardens," were constructed by the Aztecs along the shores of Lake Texcoco to grow maize, tomatoes, and many other crops.

ANSWER: **chinampas**

[10] Chili peppers grown on chinampas were sometimes used to flavor this foodstuff, which Moctezuma II and the Aztecs consumed in beverage form.

ANSWER: **chocolate** [prompt on **cocoa**] <Shimizu>

6. Ninhydrin spray can be used to detect these things, which are matched based on points, cores, and deltas in databases like the FBI's IAFIS (**eye-AY-fiss**). For 10 points each:

[10] Identify these elements of forensic evidence. The Henry Classification System identifies the three basic patterns that comprise these things as "whorls", "loops", and "arches".

ANSWER: **fingerprints** [or **thumbprints**; prompt on **prints**]

[10] A mistake in the fingerprinting procedure led the FBI to accuse Oregon lawyer Brandon Mayfield of involvement in a series of commuter train bombings that took place on March 11, 2004, in this European capital.

ANSWER: **Madrid**, Spain

[10] In this Mark Twain novel, the title lawyer uses fingerprints to prove that Tom Driscoll and Chambers have been switched at birth, thus exonerating one of the "extraordinary Italian twins" of murder.

ANSWER: **Pudd'nhead Wilson** <Jose>

7. The forces of this modern-day country defeated an Austrian army led by Leopold I by throwing rocks and tree stumps on their heads during an ambush. For 10 points each:

[10] Identify this country which won the 1315 Battle of Morgarten. This fiercely independent country provides the mercenaries who guard the Pope.

ANSWER: **Switzerland** [or **Swiss** Confederation]

[10] The Battle of Morgarten was one of the first to demonstrate the superiority of these weapons over mounted knights. Longer than a halberd, Swiss troops wielding these weapons would form namesake squares.

ANSWER: **pikes**

[10] Victories at Morgarten and Sempach helped secured the independence of the Old Swiss Confederacy, an alliance which was largely replaced by this puppet state during the Napoleonic Wars. The name of this polity comes from a Gallic tribe that once lived in the Swiss plateau.

ANSWER: **Helvetic Republic** <Bentley>

8. One of these specifically-situated instruments represents a tower guard in Beethoven's third *Leonore* overture, while another plays the protagonist's imagined memories of his brother in Aaron Copland's *Quiet City*. For 10 points each:

[10] Identify this specific use of a certain instrument that is often used to depict the fanfares of distant armies. One of these instruments plays the *Sanctus* hymn in this manner in the second movement of *Pines of Rome*.

ANSWER: **offstage trumpets** [accept anything that indicates that a **trumpet** is located **somewhere other** than with the rest of the orchestra; prompt on **trumpets**]

[10] Four trumpets play from positions around the stage during the *Tuba mirum* section of Giuseppe Verdi's work in this genre. Hector Berlioz called for four entire offstage brass bands in his version of this mass for the dead.

ANSWER: **Requiem** Mass

[10] Three offstage B-flat trumpets play a fanfare in the third movement of *Ein Heldenleben* (**yne HEL-din-lay-bin**), a tone poem by this composer of *Till Eulenspiegel's* (**OY-len-shpee-gel's**) *Merry Pranks*.

ANSWER: Richard (Georg) **Strauss** <Carson>

9. Answer the following about the chemistry of the destruction of the ozone layer, for 10 points each:

[10] Chlorofluorocarbons are a big problem because they quickly decompose to form chlorine atoms, which are examples of these species that have unpaired electrons and, as a result, are extremely reactive.

ANSWER: free **radicals**

[10] Normally in the Chapman cycle, ozone decomposition into radicals can be catalyzed by UV light, since the oxygen–oxygen bond in ozone is fairly weak, and has *this* unusual bond order.

ANSWER: **three-halves** [accept equivalents like **3/2** or **1.5**]

[10] The chlorine radicals, however, react with ozone to form chlorine monoxide, in this step of the radical mechanism. In this step of a radical chain mechanism, which happens many times, one radical is turned into another.

ANSWER: chain **propagation** step <Silverman>

10. Peterkin Gay and two friends survive on one of these places in a novel titled for the "Coral" one. For 10 points each:

[10] Name this sort of location where a group of schoolboys devolve into savagery in a novel that inverts that R. M. Ballantyne novel, William Golding's *Lord of the Flies*.

ANSWER: an **island** [or an **isle**]

[10] Peterkin's two friends in *The Coral Island* share these two first names with the protagonist of *Lord of the Flies* and his enemy, who leads boys like Roger in a rebel "tribe." Name both of them.

ANSWER: **Ralph** AND **Jack**

[10] The genre of adventure stories about boys marooned on islands informs the fantasies of Baron von Pregnitz in this author's novella *Mr. Norris Changes Trains*, which appears in *The Berlin Stories*. He collaborated with W.H. Auden on plays like *The Ascent of F6*.

ANSWER: Christopher **Isherwood** <Brownstein>

11. Drugs administered in this way typically show response curves that are sharply peaked with little range in the therapeutic window. For 10 points each:

[10] Name this method of drug delivery in which a therapeutic is injected directly into a blood vessel that is flowing towards central circulation. It is often used to drip electrolytes into the bloodstream.

ANSWER: **intravenous** [or word forms; or **IV**]

[10] Oral drug delivery has its own problems: for instance, the first-pass effect, in which the drug molecule gets metabolized by this organ before it can reach circulation. Cytochrome P450s oxidize xenobiotics in this organ.

ANSWER: **liver**

[10] On the bright side, sort of, rapid metabolism by the liver increases this crucial value, the concentration of a drug that would kill half of all patients. Ideally, this quantity is larger than the effective dose.

ANSWER: **LD50** [or **lethal dose 50** percent; prompt on **lethal dose**] <Silverman>

12. Answer the following about dogs as they pertain to the geography of Great Britain, for 10 points each.

[10] The Pembroke and Cardigan corgi breeds both originated in this constituent country of the United Kingdom, whose capital is Cardiff.

ANSWER: **Wales** [or **Cymru**; accept **Welsh** corgis]

[10] Both Norwich Terriers and Norfolk Terriers originate from this region in Great Britain, which includes the counties of Suffolk and Cambridgeshire. This region was also one of the kingdoms of the Anglo-Saxon heptarchy.

ANSWER: **East Anglia** [prompt on **Anglia**]

[10] Ghostly black dogs are said to haunt Dartmoor in Devon, which borders this southwesternmost county of England. Truro is the most populous city in this county, which also lends its name to a type of small hybrid broiler chicken.

ANSWER: **Cornwall** [accept Rock **Cornish** game hen] <Jose>

13. After being kidnapped from his home in what is now Sierra Leone, Joseph Cinque killed two men aboard this ship in a slave revolt. For 10 points each:

[10] Name this vessel whose slaves revolted and killed their colonial masters in 1839. In the Supreme Court case named for it, its occupants were ruled to be "free men" and not property.

ANSWER: La **Amistad**

[10] The majority opinion in the Amistad case was written by this justice. Abolitionists later expressed consternation when his majority opinion in *Prigg v. Pennsylvania* overturned personal liberty laws for runaway slaves.

ANSWER: Joseph **Story**

[10] This man was the chief justice during the Amistad case. He also wrote the Dred Scott decision, ruling that Dred Scott was not a citizen of the U.S. and that he had no standing to sue for his own freedom.

ANSWER: Roger Brooke **Taney** <Jose>

14. The speaker of this poem notes that "monkeys make sorrowful noise overhead" when his beloved, at the age of 16, departed. For 10 points each:

[10] Name this poem, which ends with its speaker promising "I will come out to meet you / As far as Cho-fu-Sa." It is attributed to a man known as "Rihaku."

ANSWER: The **River Merchant's Wife**: A Letter

[10] This author used the poems of Li Po and other Chinese writers to "adapt" his poem "The River Merchant's Wife." This Imagist also wrote "In a Station of the Metro."

ANSWER: Ezra **Pound**

[10] Pound also contributed to both of issues of *BLAST*, a magazine started by Wyndham Lewis that promoted this artistic movement. This abstract movement, whose name was coined by Pound, emphasized the relationship of machinery to art and life.

ANSWER: **Vorticism** [accept word forms like **Vorticist**] <Jose>

15. The work done by this type of force is independent of the path taken since the potential energy is a well-defined state function. For 10 points each:

[10] Name this type of force that can be written as the negative gradient of some potential function.

ANSWER: **conservative** force

[10] The elastic spring force is conservative, since the potential energy is held to be strictly a function of position, according to this law, which gives the restoring force on a spring to just be negative kx .

ANSWER: **Hooke's** law

[10] In reality, the spring force is not conservative, since its equation of motion also has a term equal to this quantity times the natural angular frequency times the velocity. This dimensionless quantity is the reciprocal of the Q factor.

ANSWER: **damping ratio** [or **zeta**; or **twice the damping ratio**; or **two zeta**; prompt on **damping**; the two is sometimes included into the value of zeta, but sometimes not] <Silverman>

16. This man's painting of a New York City tenement was the first work by an American to be purchased by the future Los Angeles County Museum of Art. For 10 points each:

[10] Name this painter of *Cliff Dwellers* and *Men of the Docks*. Like Winslow Homer, he was drawn to Maine seascapes, especially off of Monhegan Island.

ANSWER: George Wesley **Bellows**

[10] Bellows was a member of this school, five members of which were also members of The Eight. Holger Cahill and Alfred Barr coined the name for this school based on the gritty subjects favored by its artists.

ANSWER: **Ashcan** School

[10] Bellows is perhaps best known for his paintings, including *Stag at Sharkey's*, in which men engage in this violent activity. Like James Montgomery Flagg, Bellows painted Jack Dempsey partaking in this sport.

ANSWER: **boxing** [prompt on **fighting**] <Bentley>

17. This group's origins trace back to an incident in 1348 when the king picked up an object of a dancing partner that had fallen to the ground. For 10 points each:

[10] Identify this most prestigious military honor in England, higher than the Knights of the Thistle. The Bishop of Winchester always serves as the Prelate of this organization.

ANSWER: The Most Noble Order of the **Garter** [or Knights of the **Garter**]

[10] The Order of the Garter was founded by the third English king with this name, whose son of the same name was known as the Black Prince. The first English king of this name was known as Longshanks.

ANSWER: **Edward**

[10] One of the founding Knights of the Garter, John Chandos, fought with Edward the Black Prince at Crécy and this later battle of the Hundred Years War, where King John II of France was captured.

ANSWER: Battle of **Poitiers** (**pwaht-YAY**) <Bentley>

18. In 2015, Jeremy Corbyn, the head of the Labour Party, proposed a "people's" form of this economic policy, in which the Bank of England would be given a mandate to invest in infrastructure projects. For 10 points each:

[10] Name this economic policy that refers to central banks purchasing financial assets from commercial banks. It has been proposed as a solution for liquidity traps, and it has recently been tapered off in the US.

ANSWER: **quantitative easing** [or **QE**]

[10] Quantitative easing is an unconventional example of this type of policy, which is conventionally used to alter interest rates. It can be contrasted with fiscal policy.

ANSWER: **monetary** policy

[10] A liquidity trap is a situation in which interest rates are equal or very close to this number. It is also the price elasticity of demand for a good with perfectly inelastic demand.

ANSWER: **zero** <Cheng>

19. Some scenes of this type, including the one beginning in Book 20 of the *Iliad*, are preceded by recitations of an arming formula. For 10 points each:

[10] Give this Greek literary term for a scene depicting a given warrior's finest moment in battle.

ANSWER: **aristeia** [or **aristia**]

[10] This warrior manages to clog the river Scamander with the bodies of the Trojan dead during his *aristeia*, which ends with his defeat of Hector.

ANSWER: **Achilles** [or **Achilleus**]

[10] Books 5 and 6 of the *Iliad* contain another extensive *aristeia*, in which this Greek warrior and son of Tydeus kills Pandaros, nearly kills Aeneas, and wounds both Aphrodite and Ares.

ANSWER: **Diomedes** [or **Diomede**] <Carson>

20. Practitioners of this spiritual movement founded the Shen Yun Performing Arts dance company. For 10 points each:

[10] Name this new Chinese religious movement that emphasizes *qigong* (**chee-gong**) exercises as part of the cultivation of virtue. It was founded by Li Hongzhi (**hung-JURR**).

ANSWER: **Falun Gong** [or **Falun Dafa**]

[10] The meditative *qigong* exercises of Falun Gong and other Chinese religions are related to this slow-moving "soft-style" martial art.

ANSWER: **t'ai chi** ch'üan

[10] The Dharma Wheel used as a symbol of Falun Gong also symbolizes this set of Buddhist teachings that includes right speech, right resolve, and right livelihood, along with five other principles.

ANSWER: Noble **Eightfold Path** [or **Eightfold Way**] <Kothari>

21. Brookhaven National Laboratory and Cold Spring Harbor Laboratory are both on this island, which is separated from Manhattan by the East River estuary and from Connecticut by a namesake sound. For 10 points each:

[10] Name this island, whose western end is home to the New York City boroughs of Brooklyn and Queens.

ANSWER: **Long** Island

[10] The South Fork, a peninsula on the east end of Long Island, is home to this collection of villages and hamlets that serve as a popular seaside resort and summer vacation destination, largely for wealthy people. Montauk and Sag Harbor are among the towns in this region.

ANSWER: The **Hamptons**

[10] The first of these developments was built in Long Island's Nassau County in a town then known as Island Trees. These suburban areas were developed by a namesake architect for returning World War II veterans.

ANSWER: **Levittowns** <Jose>