



PACE NSC 2017 - Round 10 - Tossups

1. This real-life person "sees into our inmost arts / And can't be fooled by any trickster's arts" in Richard Wilbur's translation of a play. This person's second wife commissioned the Old Testament plays *Esther* and *Athalie*. This person allowed an actor to be buried on sacred ground after he died following an onstage fit of coughing. In a play, this real-life person pardons the protagonist for hiding his exiled friend's incriminating (*) letters and orders the arrest of the title character for stealing the protagonist's estate; those orders are announced by an officer in Act V. This leader sponsored an acting troupe that performed plays like *The Learned Ladies*, *The School for Wives*, *The Imaginary Invalid*, and *Tartuffe*. For 10 points, name this monarch who ruled during the careers of Moliere and Racine.

ANSWER: Louis XIV [prompt on the King or Prince from *Tartuffe*] <Brownstein>

2. According to the Lockean proviso, this *specific resource* should only be consumed such that enough is left for others. Henry George advocated for a single economy-wide tax on this resource; that tax is levied on its "unimproved" form. Elinor Ostrom asserted that successful communal management of this resource was possible without government, in contrast to Garrett Hardin's original conclusion in "The (*) Tragedy of the Commons." The Physiocrats believed that this resource's products are the sole source of wealth. This term now denotes all exhaustible natural resources that can be combined with capital and labor to produce goods. For 10 points, name this factor of production that is bought and sold along with the property sitting on top of it in the real estate market.

ANSWER: land [or common land; prompt on property; prompt on real estate; prompt on commons; prompt on natural resources before "tax"] <Aggarwal>

3. People who used this text referred to it as "Our Place in the Shadows" or "The Light that Came From Beside The Sea". A character in this text orders several sympathetic owls to deliver a ball of congealed croton tree sap as a substitute for her heart after she is impregnated when a skull wedged in a calabash tree spits in her hand. In another story from this text, bromeliad flowers are used to make a fake crab that entraps the killer of the (*) Four Hundred Boys. Trials involving the Dark, Cold, Bat, Razor, and Jaguar Houses are detailed in a section of this text in which the killers of Seven Macaw, Zipacna, and Cabrakan outwit the rulers of Xibalba (shih-BAL-bah). The adventures of the Hero Twins Hunahpu and Xbalanque (sh'bah-LON-kay) are related in, for 10 points, what compilation of K'iche Mayan myths?

ANSWER: the Popol Vuh (vookh) [or Poopol Wuuj] <Carson>

4. This composer wrote an *Elegy* for flute and piano for the flautist Manfred Ibel (EE-bell) that he later reworked into the second-movement *Canzone* of his piano concerto. Eleanor Steber commissioned a piece by this man that features an *allegro agitato* section depicting the passage of an electric streetcar. One of his works constantly shifts between 4/2, 5/2, 3/2, and 6/2 time signatures; that piece's main melody ascends and descends in overlapping three-note increments. Erika has an affair with (*) Anatol in an opera by this man with a libretto by his life partner Gian Carlo Menotti. He arranged a movement from his 1936 string quartet into a piece that was played at FDR's funeral. For 10 points, name this American composer of *Knoxville: Summer of 1915*, *Vanessa*, and the mournful *Adagio for Strings*.

ANSWER: Samuel Barber [or Samuel Osborne Barber II] <Carson>

5. In the absence of circular polarization, Jones vectors are depicted with values with this property. In quantum mechanics, operators corresponding to observables must have eigenvalues with this property, meaning the operators must be self-adjoint and Hermitian. For an AC circuit, this property is held by the active power, but not the reactive power. This property is not possessed by probability amplitudes, but is held by probability densities as they are the square (*) modulus of the amplitudes. For a quantity represented by a phasor, the component with this property equals the magnitude of the phasor times the cosine of phase. When reactance is zero, impedance has this property and equals resistance. For 10 points, name this property held by physical quantities with no imaginary component.

ANSWER: real number [do NOT accept "positive" or "negative"] <Wang>

6. Rebecca Lukens was a pioneering female executive in this industry. According to Clayton Christensen, factories making this good, such as one named for Edgar Thomson, were disrupted by smaller rivals in the 1970s. Higher-quality versions of this good were produced through the Gilchrist–Thomas process. The company town of Gary, Indiana, was founded to produce this material, which was once Allentown's chief industry. A man who made his fortune in this industry wrote (*) *The Gospel of Wealth*. The first billion-dollar company formed from an acquisition of a company that produced this good by J. P. Morgan. This industry grew dramatically following the invention of the Bessemer Process. For 10 points, name this industry in which Andrew Carnegie made his fortune.

ANSWER: steel <Bentley>

7. This man argued that judgments are a multiple relation between a mind and the objects involved in the judgment. Drawing from William James, this philosopher developed a form of monism in which mental and physical entities reduce to a neutral substance, in his book *The Analysis of Mind*. This philosopher, who coined the term "logical atomism," criticized Meinong's views on non-existent objects in a paper about definite descriptions like (*) "The present King of France is bald." With an alphabetically later coauthor, he developed a theory of types to avert his namesake paradox, which considers whether the set of all sets that do not contain themselves contains itself. For 10 points, name this author of "On Denoting" who worked with Alfred North Whitehead on *Principia Mathematica*.

ANSWER: Bertrand Arthur William Russell <Kothari>

8. Objects used to interact with this substance are often inscribed with adinkra symbols by the Akan people and are called mrammou. Frederick Hodgson's demands to be given an object made of this substance were resisted by Queen Yaa in a 1900 revolt. The Wangara clans relied on the Bambouk region's supply of this substance, the value of which can be measured in units called *mithqal*. An object made of it legendarily (*) fell out of the sky onto the lap of Osei Tutu. A stool made of this substance served as the royal throne for the Ashanti Empire. Its value precipitously dropped in Egypt after it was handed out by Mansa Musa during his pilgrimage to Mecca. For 10 points, identify this precious substance that lent its name to a "coast" in modern-day Ghana.

ANSWER: gold [or Au] <Shimizu>

9. A character in this novel abandons his career as a literary scholar in style, by burning his drawer full of index cards on every academic subject. After running over a girl with a truck, a character in this novel suffers horrific nightmares in which he hacks his newborn daughter to pieces. At the end of this novel, characters such as the accused rapist Gumeriendo Tello (TAY-yoh) are killed off in a huge fire as their (*) creator struggles to keep up with the workload at Radio Panamericana. The odd chapters of this novel describe its protagonist's affair with the sister-in-law of his uncle, whereas the even chapters detail the increasingly unhinged soap opera plots concocted by Pedro Camacho. For 10 points, name this novel about a radio station writer by Mario Vargas Llosa.

ANSWER: Aunt Julia and the Scriptwriter [or La tía Julia y el escribidor] <Gupta>

10. In a 1976 experiment that exactly recapitulated theory, Robert Trivers and Hope Hare found that these individuals weighed almost exactly three times as much as their counterparts. The green-beard effect was discovered in a study of how these individuals' fitness depended on their genotype. These individuals secrete 9ODA from their mandibular glands to suppress development of the *corpora allata*. E.O. Wilson has extensively outlined (*) social structures in which these individuals undergo a "nuptial flight" and are diploid, but reproduce to form offspring that are mostly haploid. In many eusocial animals like naked mole rats, these individuals are the only ones who reproduce. For 10 points, name these dominant females in ant and bee colonies.

ANSWER: queen ants [or queen bees; or other specific animals; prompt on females or similar answers; prompt on insects] <Silverman>

11. In William Gibson's "The Gernsback Continuum", this term is combined with the word "raygun" to describe an art deco-inspired retro-futuristic style. In England, the latest period of this style emphasized verticality and was thus named "Perpendicular". Examining window tracery can help distinguish between its Rayonnant and Flamboyant periods. Many buildings in this style were controversially "restored" by Eugène (*) Viollet-le-Duc (oo-JEN vee-oh-LAY luh dook), who spearheaded its 19th-century revival. Several elements of this style's predecessor, the Romanesque, survive in the Chartres Cathedral, which is otherwise in this style. Ribbed vaults, pointed arches, and flying buttresses characterize, for 10 points, what style of medieval architecture exemplified by towering cathedrals, such as the Notre Dame de Paris?

ANSWER: Gothic [accept Raygun Gothic or Perpendicular Gothic or Rayonnant Gothic or Flamboyant Gothic or Gothic Revival] <Jose>

12. One poem in this collection exclaims, "Eclaircise the myths Asiatic! – the primitive fables", and provides the title to E. M. Forster's *A Passage to India*. The speaker of another poem in this book proclaims "Diverge, fine spokes of light, from the shape of my head" and tells "dumb, beautiful ministers" that "great or small, you furnish your parts toward the soul". This collection contains a poem opening, (*) "FLOOD-TIDE below me! I see you face to face", and another calling a material the "beautiful uncut hair of graves". Originally published as a group of 12 poems in 1855, its final "Deathbed edition" in 1891 consisted of over 400 poems. "Crossing Brooklyn Ferry" and "Song of Myself" originally appeared in, for 10 points, what poetry collection by Walt Whitman?

ANSWER: Leaves of Grass <Jose>

13. The final leader of these people refused a decree to allow safe passage to the cousin he deposed, leading to his loss at the Battle of Ten Mile Post. These people were divided into the Hasdings and Silings. A half-Roman soldier of this ethnicity defeated Radagaisus in 406 CE, but was executed two years later by Honorius; that "last of the Roman generals" was named Stilicho. Their final king, Gelimer, was defeated by (*) Belisarius. King Gaiseric established a capital for these people at Carthage in 439 CE after they emigrated from Spain to Northern Africa. An army of these people destroyed aqueducts and the Temple of Jupiter Optimus Maximus during their 455 CE sack of Rome. For 10 points, name these Germanic people who lend their name to acts of destruction.

ANSWER: Vandals [or Vandali] <Bentley>

14. According to Christoph Luxenberg's interpretation of a certain text, this place contains many white raisins. The furthestmost boundary of this place is marked by a lote-tree. In this place, people can drink a ginger-containing mixture from a fountain named Salsabil. In this place, Moses helped reduce the number of obligatory prayers from fifty to five. That took place during the Mir'aj, a visit to this place that followed the Isra, a (*) nighttime journey from Mecca to Jerusalem. Inhabitants of this place will be accompanied by beautiful beings called *houris* (HOO-rees). People will inhabit *barzakh* until they are sent to *Jahannam* or this other place on the Day of Resurrection. For 10 points, name this place in Islam where the righteous will eventually go after death.

ANSWER: heaven [accept paradise or garden; accept Jannah] <Cheng>

15. This city was the site of the so-called "Trefa (TRAY-fuh) Banquet", which was held to honor the first graduating class of its Hebrew Union College. Its Alhambra-inspired Plum Street Temple is now named for the Reform rabbi Isaac M. Wise. This city is the origin of a food consisting of spiced ground meat mixed with steel-cut oats; that sausage, *goetta* (GETT-ah), was introduced by the many German immigrants who settled in its Over-the-Rhine district. Martha, the last (*) passenger pigeon, died in this city's zoo, which is the U.S.'s second oldest. Macedonian immigrants to this city created a spiced meat sauce used to top hot dogs or spaghetti that is served by Gold Star and Skyline restaurants. A namesake "chili" is a characteristic dish of, for 10 points, what large city on southwestern Ohio's border?

ANSWER: Cincinnati, Ohio <Carson>

16. *Streptococcus* is a member of a bacterial order conventionally named for this compound. The co-polymer between this compound and glycolic acid is commonly used in surgical implants. Ringer's solution, used for IV replacement, is named for being supplemented with this organic compound. Tumor micro-environments are at low pH mainly because cancer cells make a lot of this (*) acid. In the Cori cycle, this compound moves to the liver, then is oxidized and converted into glucose via gluconeogenesis. This compound, which has the formula $C_3H_6O_3$, forms when NADH reduces pyruvate at the end of glycolysis. For 10 points, name this byproduct of mammalian anaerobic fermentation, which accumulates in the muscles after a vigorous workout, and was first discovered in sour milk.

ANSWER: lactic acid [or lactate] <Silverman>

17. A model of the patron's Dutch estate sits on a shelf in the upper-left of this artist's *The Hope Family*. A grief-stricken Britannia, cast in shadow, stands next to a lion as Neptune delivers the title admiral to her in this artist's *The Immortality of Nelson*. Putti surround the title scientist as he raises a hand to a key tied to a kite string in this artist's *Benjamin Franklin Drawing Electricity from the Sky*. In another of his paintings, a (*) tomahawk sits under the tattooed leg of a man who adopts a Thinker pose. In that contemporary history painting by this artist, Thomas Hinde kneels to try to stop the bleeding of the title British hero. For 10 points, name this Anglo-American painter who depicted the Battle of the Plains of Abraham in *The Death of General Wolfe*.

ANSWER: Benjamin West <Bentley>

18. In information retrieval, this function's namesake similarity is a common method of quantifying how well documents are related. The Dottie number is this function's unique real fixed point. This function is used in the real parts of both De Moivre's formula and Euler's formula. When graphed, an analogue of this function forms a catenary curve. The dot product of two vectors multiplies those vectors' norms by this function of the (*) angle between them. When a , b , and c are the sides of a triangle, the fact that " c -squared equals a -squared plus b -squared minus two- ab times *this function* of the angle opposite c " is known as the law of this function. For 10 points, name this function whose reciprocal is secant, defined as adjacent over hypotenuse.

ANSWER: cosine [or cos; accept hyperbolic cosine or cosh; accept answers like cosine of x] <Aggarwal>

19. Homeowners in this city were granted a special bread ration called the *panes aedium*. The large Baths of Zeuxippus in this city were damaged during a riot among different *demes*. The dome at the center of this city, known as the *milion*, contained an important relic retrieved from the Holy Land by Helena, arguably the first Christian pilgrim. The tops of the towers spaced 180 feet apart in this city's Walls of Theodosius were removed to house (*) bodies during a devastating plague in 541 CE. Defenders in this city resorted to chaining the Golden Horn and deploying Greek Fire to repel a 10th century invasion. The Blues and Greens clashed in this city during the Nika Riots. For 10 points, name this capital of the Byzantine Empire.

ANSWER: Constantinople [or Istanbul; or Byzantium] <Bentley>

20. The speaker of a poem by this author wonders why, if "lecherous goats," "serpents envious," and "poisonous minerals" cannot "be damn'd," why he should be. This poet lamented that "black sin" has "betrayed to endless night my worlds both parts" in a poem that compares the body to a microcosm. A poem by this author tells the title figure that he will never be "chaste, except you ravish me" and wishes Him to (*) "break, blow, burn." This author of poems beginning "I am a little world made cunningly" and "Batter my heart, three-person'd God" addressed a "slave to fate, chance, kings, and desperate men" who some have called "Mighty and dreadful," and tells that concept "thou shalt die." For 10 points, name this author whose Holy Sonnets include one beginning "Death be not proud."

ANSWER: John Donne <Brownstein>

21. Al Jazeera cameras followed Kenneth Schiel's return to the site of this event. The Medina Standard was named for, but not applied to, a man who faced trial due to this event. It took place in a region codenamed Pinkville. Thirty years after this incident, helicopter pilot Hugh Thompson, Jr. was awarded the Soldier's Medal for helping to reduce casualties during it. Photos of this event by Ronald Haeberle (*) were adapted into the poster *And babies*. *Life* and *Look* both passed on the Seymour Hersh article that broke the news of this event. Near the start of this event, a civilian was thrown into a well. It was perpetrated by members of Charlie Company, including Lieutenant William L. Calley. For 10 points, name this 1968 massacre of residents of a Vietnamese village.

ANSWER: **My Lai** (mee lye) massacre [or **Son My** massacre; accept **Pinkville** Massacre before mentioned]
<Bentley>



PACE NSC 2017 - Round 10 - Bonuses

1. Daniel Auber's *The Mute Girl of Portici*, which ends with an eruption of Mount Vesuvius, is usually considered to be the first opera in this genre. For 10 points each:

[10] Identify this primarily-19th-century genre of dramatic opera, which includes many works with libretti by Eugène Scribe (**oo-ZHEN screeb**). They are characterized by large casts and extravagant productions.

ANSWER: **grand** opera [or **grand** opéra]

[10] Another pioneer of the grand opera was this German composer, who included the "Ballet of the Nuns" in his early hit *Robert le Diable* (**roh-BARE luh dee-AH-bluh**). He died before the premiere of *L'Africaine* (**la-free-KEN**), his opera about Vasco da Gama.

ANSWER: Giacomo **Meyerbeer** [or Jacob Liebmann **Beer**]

[10] Scribe's libretto for Auber's *Gustave III* was eventually adapted into *A Masked Ball*, an opera by this Italian composer whose late-career successes included *Otello*, *Falstaff*, and *Aida*.

ANSWER: Giuseppe **Verdi** [or Giuseppe Fortunino Francesco **Verdi**] <Carson>

2. This government was defeated after the so-called Bloody Week. For 10 points each:

[10] Name this socialist government that ruled for around six months in 1871. The first president of the Third Republic, Adolphe Thiers, sent in Patrice MacMahon to suppress it.

ANSWER: **Paris Commune**

[10] The Paris Commune formed in the wake of France's war with this other country. Napoleon III was captured by this country at the Battle of Sedan.

ANSWER: Kingdom of **Prussia** [or Königreich **Preussen**; accept the North **German Confederation** or the **German Empire**; prompt on **Germany**]

[10] The governing body of the Paris Commune elected this intellectual, who was imprisoned at the time, as president. This man's theory of violent socialist revolutions suggests that a group of highly organized secretive conspirators should seize power from the bourgeoisie.

ANSWER: Louis-Auguste **Blanqui** <Jose>

3. An early leader of these people, Otrera, is sometimes credited with founding the Temple of Artemis at Ephesus; later, Otrera's daughter Penthesilea fought for Troy in the Trojan War. For 10 points each:

[10] Name this group of legendary female warriors headquartered on the Thermodon river at Themiscyra (theh-miss-KYE-rah).

ANSWER: **Amazons** [accept **Amazonians**]

[10] Heracles may have taken Theseus with him on his quest to retrieve this magical item belonging to an Amazonian queen. Sources generally agree that some element of the quest ended up sparking a war between the Amazons and Athens.

ANSWER: Hippolyta's **girdle** [or Hippolyta's **belt**]

[10] Sources vary regarding whether Theseus abducted and later married Hippolyta or this other Amazon, Hippolyta's sister. Some stories claim that a third Amazon named Molpadia shot this woman to prevent her abduction by Theseus.

ANSWER: **Antiope** (ann-TIE-oh-pee) <Carson>

4. The speaker asserts that "dreams have destroyed us" before noting "all things turn bitter in the end" and concluding "dreams are not a bad thing" in his poem "Libertad! Igualdad! Fraternidad!". For 10 points each:

[10] Name this Imagist poet of "This Is Just To Say", who declared "so much depends / upon / a red wheel / barrow" in the twenty-second poem from his collection *Spring and All*.

ANSWER: William Carlos **Williams** [prompt on **WCW**]

[10] "The Red Wheelbarrow" consistently uses this poetic technique, in which the syntax of a line continues to the next line rather than ending where the line ends, as in end-stopping. Examples include the breaks between "depends" and "upon" and between "wheel" and "barrow".

ANSWER: **enjambment**

[10] Williams's epic poem *Paterson* repeatedly quotes his five-word poetic credo, a phrase that takes the form "no BLANK but in BLANK". Give the words that fill in both blanks.

ANSWER: "no **ideas** but in **things**" [both underlined answers required; accept either the full quote or the individual words in either order] <Carson>

5. *Bacillus subtilis* (buh-SILL-us suh-TILL-us) is the namesake of the world's most important industrial enzyme, subtilisin (suh-till-EYE-sin), which is one of these proteins that is used in laundry detergent. For 10 points each:

[10] Name these proteins that use a catalytic triad of histidine, aspartate, and a namesake polar amino acid to hydrolyze peptide bonds. Examples of them include pepsin and trypsin.

ANSWER: **serine proteases** [or **serine proteinase**; prompt on **proteases** or **proteinases**; prompt on **hydrolases**]

[10] Serine proteases auto-activate zymogens like pepsinogen in this body organ, which receives a bolus of food after peristalsis pushes it through the esophagus.

ANSWER: **stomach**

[10] A combination of serine proteases and acid convert the food bolus in the stomach into this acidic lumpy fluid that leaves the stomach and enters the small intestines.

ANSWER: **chyme** <Grames>

6. Late in his career, this artist started leaving his paintings outside during the winter with the idea that the cold would either "kill or cure" them. For 10 points each:

[10] Name this Expressionist artist who tackled the theme of family illness in his paintings *The Sick Child* and *Death in the Sick Room*.

ANSWER: Edvard **Munch** (MOONK)

[10] In 2012, Leon Black spent over one hundred million dollars to acquire one of the four versions of this Munch masterpiece, in which an anguished man on a bridge holds his hands to his face in front of a reddish sky.

ANSWER: *The **Scream*** [or *The **Scream** of Nature* or ***Skrik*** or *The **Shriek*** or *Der **Schrei** der Natur*]

[10] Munch's first major exhibition took place in 1892 in this city, although it was soon shut down by censors. An artist from this city's branch of the Dada movement made a photomontage whose long title begins *Cut with the Dada Kitchen Knife*....

ANSWER: **Berlin**, Germany <Bentley>

7. A woman with this prefix in her name kicks in the head of a resistance member in order to save him from the agony of a "Particicution." For 10 points each:

[10] Identify this prefix in the name of the protagonist of *The Handmaid's Tale*, which indicates that she belongs to her Commander, Fred.

ANSWER: "**of**"

[10] Offred's friend Ofglen and the Commander's chauffeur Nick are members of this resistance organization, which takes its code name from a holiday no longer celebrated in Gilead.

ANSWER: **Mayday**

[10] The author of *The Handmaid's Tale*, Margaret Atwood, is from this country, whose contemporary authors include Alice Munro and the Sri Lankan-born Michael Ondaatje (on-DAH-chee).

ANSWER: **Canada** <Brownstein>

8. The sediment directly deposited by these things is called till. For 10 points each:

[10] Name these slowly advancing masses of ice. Erosion caused by them turns angular V-shaped valleys into smoother U-shaped valleys.

ANSWER: **glaciers**

[10] The most widespread sediment produced by glaciers are these ridges of till. The "lateral" type of them are formed when a glacier melts away, while the "medial" type of them form as glaciers merge.

ANSWER: **moraines**

[10] Till is contrasted with stratified sediment, the latter of which is deposited by the melted water of a glacier instead of by the glacier itself. Unlike till, stratified settlement usually has this property, in which the grain sizes of the sediment are relatively similar.

ANSWER: **sorted** [or **sorting**] <Jose>

9. This meeting of 29 different countries was organized by Prime Minister Ruslan Abdulgani. For 10 points each:

[10] Name this conference held in Southeast Asia in which African and Asian countries agreed to organize economic alliances and challenge colonialism. It was a precursor to the Non-Aligned Movement.

ANSWER: **Bandung** Conference

[10] The Bandung (**bon-DOONG**) Conference was largely organized by this president, whose programme of "guided democracy" legitimized his autocratic rule.

ANSWER: **Sukarno** [or **Soekarno**]

[10] Those who participated in the Bandung Conference decided not to ally themselves with these two super-powers, making them them "third world" countries. These two superpowers fought the "Cold War" with each other.

ANSWER: **United States** of America and the **Soviet Union** [accept **USA** or **America** in lieu of United States; accept **USSR** in place of the Soviet Union. Prompt on **Russia** for Soviet Union] <Jose>

10. Answer the following about horses with variable abilities to communicate with humans, for 10 points each.

[10] Wilhelm von Osten supposedly taught this horse how to perform arithmetic and spell; however all claims of animal cognition were debunked by the psychologist Oskar Pfungst.

ANSWER: Clever **Hans**

[10] This author's first poetry collection is titled *The Talking Horse and the Sad Girl and the Village Under the Sea*. The intelligent, but socially-awkward Christopher Boone learns that his mother is not truly dead in this author's *The Curious Incident of the Dog in the Night-Time*.

ANSWER: Mark **Haddon**

[10] Sextus Propertius attributed the ability of speech to Arion, a talking horse fathered by this Greek god of the sea.

ANSWER: **Poseidon** <Jose>

11. This monarch re-routed the diggers working on a canal to link the North Sea to the Danube to go fight in one of his wars. For 10 points each:

[10] Name this monarch whose scholars introduced lowercase into his namesake miniscule script. Alcuin of York worked at this ruler's court during his dynasty's namesake renaissance.

ANSWER: **Charlemagne** [or **Charles the Great**; or **Charles I**; or **Carolus Magnus**; or **Karolus Magnus**; prompt on **Charles** or **Carolus**]

[10] Charlemagne also ordered the construction of one of these structures at Mainz that was some five hundred paces in length. An iron one of these structures in Shropshire that spanned the Severn notably survived a flood that destroyed wooden-built ones.

ANSWER: a **bridge**

[10] During Charlemagne's reign, over four thousand of these people were massacred in the Bloody Verdict of Verden. In the later stages of the Roman Empire, a military post was named for these people's "Shore."

ANSWER: **Saxons** [or **Saxones**] <Bentley>

12. Harry screams racist slurs at Dr. Ganderbai after the doctor discovers that Harry's bed doesn't actually contain a venomous snake in this author's story "Poison." For 10 points each:

[10] Name this author of the memoir *Boy* and a story in which Mary murders her husband with a leg of lamb, titled "Lamb to the Slaughter."

ANSWER: Roald **Dahl**

[10] In *Boy*, Dahl and his friends play a prank involving one of these animals on the unpleasant sweet-shop owner Mrs. Pratchett. In *The Witches*, the Grand High Witch uses Formula 86 to turn the narrator into one of these animals.

ANSWER: **mouse** [or **mice**]

[10] A more pleasant sweet-seller, Willy Wonka, operates a factory named for this substance that Charlie and his grandfather visit in a Dahl novel.

ANSWER: **chocolate** <Brownstein>

13. After killing a lion at Timnah, this Biblical judge discovered that its carcass had become home to a swarm of bees, and ate some honey from inside the carcass. For 10 points each:

[10] Name this judge, whose campaign against the Philistines involved killing a thousand Philistines with a donkey's jawbone.

ANSWER: **Samson** [or **Sampson**]

[10] Samson was captured by the Philistines after his lover Delilah discovered that he would become weak if someone performed this action on him. Delilah did so after Samson fell asleep on her knees.

ANSWER: **shave** his **head** [accept different word forms and obvious equivalents like **cut** off his **hair**; do not accept "weave his hair into a web" or similar answers]

[10] Samson was not allowed to cut his hair because he was one of these people from birth. They took a vow described in Chapter 6 of the Book of Numbers, forbidding them from consuming grapes or cutting their hair.

ANSWER: **Nazirites** [or **Nazarites**] <Cheng>

14. In the lead-up to the 2016 US presidential election, Libertarian candidate Gary Johnson failed to recognize the name of this city. For 10 points each:

[10] Name this northwestern Syrian city, where protracted fighting between Bashar al-Assad's forces and that of the Syrian opposition has likely reduced its population to below that of Damascus.

ANSWER: **Aleppo** [or **Halab**]

[10] During the Battle of Aleppo, the Syrian Air Force often dropped these improvised explosive devices, which are essentially large cylindrical containers filled with gasoline, nails, and steel. They are named for the shape of their containers.

ANSWER: **barrel** bombs

[10] During the fighting, Aleppo's neighborhood of Sheikh Masood was largely controlled by this Kurdish-dominated militia, which defeated ISIS forces at the siege of Kobani. In late 2015 it formed the basis of Rojava's US-backed Syrian Democratic Forces.

ANSWER: **YPG** (yuh-pah-guh) [or **People's Protection Units**; or **Yekineyen Parastina Gel**; accept **YPJ** (yuh-pah-juh) or **Women's Protection Units** or **Yekineyen Parastina Jin**] <Jose>

15. The gyromagnetic ratio is the ratio between this quantity and the magnetic dipole moment. For 10 points each:

[10] Name this classical quantity that, in quantum mechanics, is usually considered to have a "total" value symbolized J equal to the sum of two operators symbolized L and S .

ANSWER: **angular momentum** [do not accept or prompt on "momentum"]

[10] The Stern–Gerlach experiment proved electrons don't have just orbital angular momentum, but also this form of intrinsic, quantized angular momentum, which is often labelled for electrons as pointing either "up" or "down".

ANSWER: **spin** angular momentum

[10] Another key result of the Stern–Gerlach experiment was that if you select only for electrons with positive spin along the z -axis, then perform *this action*, and then measure their spin along the z -axis again, half the electrons now have a negative spin. A description is fine.

ANSWER: **measure** their spins along the **x -axis** [or **measure** their spins along the **y -axis**; or **measure** their spins in a **different direction**; or **rotate 90 degrees**; or any obvious equivalents] <Silverman>

16. This work gained its official status after members of the city council in Erie, Pennsylvania started singing "The Internationale" in 1931. For 10 points each:

[10] Identify this poem, whose third verse controversially states, "No refuge could save the hireling and slave / From the terror of flight, or the gloom of the grave." It was written by Francis Scott Key.

ANSWER: "The **Star-Spangled Banner**" [or "**Defence of Fort M'Henry**"; prompt on The National Anthem]

[10] British General George Cockburn, alluded to in the "hireling and slave" line, burned Washington, D.C. in part due to the Americans' burning of this city earlier in the war. Zebulon Pike was killed in the battle named for this city.

ANSWER: **York** [or **Toronto**]

[10] In 1816, Francis Scott Key attended the first meeting of a society named for promoting this policy. Paul Cuffee led a group of people to Freetown as part of this policy, once supported by Abraham Lincoln.

ANSWER: **colonization** [or **repatriation** of freed African-American slaves; accept anything that mentions **sending African Americans** or **slaves** away from the United States to places such as **Africa**; prompt on **abolition**] <Bentley>

17. The "anomic" form of this condition, which is also known as dysnomia, causes an impairment in word retrieval. For 10 points each:

[10] Name this disorder, the inability to correctly process or produce speech.

ANSWER: **aphasia**

[10] In contrast to Wernicke's (**VAIR-nick-uh's**) aphasia, in which a patient produces nonsense words, the type of aphasia named for this Frenchman causes patients to be unable to produce any words. It is caused by damage to this man's namesake region of the brain.

ANSWER: Paul **Broca** [accept **Broca's** aphasia]

[10] Broca's area can be found in the cerebral cortex as part of the "frontal" one of these structures. The other instances of these structures in the cerebral cortex are the parietal, occipital, and temporal.

ANSWER: frontal **lobe** [or parietal **lobe**; or occipital **lobe**; or temporal **lobe**] <Jose>

18. The term symbol for these elements is always one-S-zero. For 10 points each:

[10] Name these elements whose atomic symbols are placed in brackets in a shorthand often used when writing electron configurations.

ANSWER: **noble gases** [or **inert gases**; or Group **18**; or Group **8**]

[10] Other than helium, noble gases have full valence shells comprising a single s orbital and three of these orbitals, which are shaped like dumbbells and are oriented along the coordinate axes.

ANSWER: **p** orbitals

[10] The one in the term symbol one-S-zero is the spin multiplicity and corresponds to a total spin of zero, since all the electrons in a noble gas are paired. In general, for total spin S , the spin multiplicity is what function of S ?

ANSWER: **$2S$ plus 1** [or **two** times **S plus one**; or mathematical equivalents] <Silverman>

19. Julian Barneuve, a collaborator with this government, is one of the protagonists of Iain Pears's novel *The Dream of Scipio*. For 10 points each::

[10] Name this puppet government that Albert Camus fought against. During its rule, the author of the planned four-volume novel *Suite Française*, Irène Némirovsky, was deported and killed.

ANSWER: **Vichy** (vee-SHEE) France [or Régime de **Vichy**; prompt on **France**]

[10] Jean Anouilh (ah-NOO-ee) allegorically represented the Vichy government in his adaptation of this classical play, which adds the character of a nurse and removes a blind character.

ANSWER: **Antigone**

[10] This author described his fight against the occupation of France in *Flight to Arras* (ah-ROSS), which, like *Wind, Sand and Stars*, is one of his aviation-themed memoirs. A book by this author is narrated by a pilot whose plane crashes in the Sahara.

ANSWER: Antoine de **Saint-Exupéry** [or Antoine Marie Jean-Baptiste Roger, comte de **Saint-Exupéry**] <Brownstein>

20. In 1905, the elimination of Maurice Ravel from competition for the Prix de Rome at this institution caused a national scandal that ended when Gabriel Fauré became its director. For 10 points each:

[10] Name this educational institution whose other directors included Luigi Cherubini (care-oo-BEE-nee) and Ambroise Thomas (awm-BWAHZ toh-MAH).

ANSWER: **Conservatoire de Paris** [or **Paris Conservatory**]

[10] Among Fauré's appointees at the conservatory was this composer of *La Péri* and *The Sorcerer's Apprentice*, who eventually replaced Charles-Marie Widor (sharl mah-REE vee-DORE) as a composition professor.

ANSWER: Paul Abraham **Dukas** (due-KAHSS or due-KAH)

[10] While modernizing the final exam system, Fauré commissioned Dukas to write a *Villanelle* for this coiled brass instrument, which players can "stop" by putting their hand inside the bell.

ANSWER: French **horn** [or double **horn**; do not accept any other kind of horn] <Kothari>

21. Among this man's domestic accomplishments include granting serfs a form of maternity leave and backing the development of the world's first rain gauge. For 10 points each:

[10] Identify this fourth ruler of Korea's Joseon (**JOH-sun**) dynasty whose establishment of the 28-letter hangul script is still celebrated on an October holiday.

ANSWER: **Sejong** the Great

[10] Because the hangul script made it too easy to read, later Korean rulers tried to ban it and use the hanja script instead. Hanja refers to the characters borrowed from this country, whose Ming Empire helped defend Korea from a Japanese invasion.

ANSWER: **China**

[10] One factor in repelling the Japanese invasion of Korea in the late 16th century was the Korean use of these boats, named for their heavy armor. A cannon could be placed in the dragon head of these ships, which also had spikes to prevent raids.

ANSWER: **turtle** ships [or **geobukseon**; or **gwiseon**] <Bentley>