



PACE NSC 2017 - Round 05 - Tossups

1. Nicholas Vincent explored the Biblical basis for the 25 enforcers of this agreement in his 2012 "Very Short Introduction" to it. A companion to this agreement banned capital punishment for violations of forest law. This agreement mandated the removal of fish weirs from all rivers and the removal of "all foreign knights, crossbowmen, sergeants and mercenaries." This agreement was declared "null, and void of all validity for ever" by Pope Innocent III. (*) Clause 39 of this document requires trial by jury and is referenced in the 1628 Petition of Right. It was drafted by Stephen Langton, Archbishop of Canterbury, and could not avert the First Barons' War. For 10 points, name this document signed by King John at Runnymede in 1215, which guarantees many English liberties.

ANSWER: Magna Carta [or Great Charter; or Magna Carta Libertatum] <Bentley>

2. Adoptive cell transfer usually entails transfer of these cells. The zeta chain of a protein expressed by these cells is fused to a single-chain variable fragment to create a chimeric receptor called a CAR (car). FOXP3 governs development of the "regulatory" type of these cells. These cells' receptors undergo VDJ recombination but not somatic hypermutation. Professional APCs like dendritic cells (*) present peptide-protein complexes called MHCs on their surfaces to these cells. Most interleukins are secreted by these cells, which are canonically divided into CD4 or CD8 positive. These cells undergo positive selection while maturing in the thymus. For 10 points, name these lymphocytes that come in cytotoxic and helper varieties.

ANSWER: T cells [or T lymphocytes; or specific types of T cells] <Silverman>

3. In this novel, Ned is embarrassed when a rival suitor mocks his gift of the sentimental magazine *Keepsake*. In this novel's first chapter, the main female character takes an emerald ring and bracelet from her deceased mother's jewelry collection, allowing her sister Celia to keep the rest. A character in this novel allows the death of his blackmailer, who knows that he made his fortune by marrying into a family that pawned stolen goods; that banker is Mr. (*) Bulstrode. Rosamond Vincy ruins her husband, the doctor Tertius Lydgate, in this novel, whose protagonist foregoes the inheritance of her first husband, the self-centered scholar Casaubon, in order to marry Will Ladislaw. For 10 points, name this lengthy "study of provincial life" by George Eliot.

ANSWER: Middlemarch, *A Study of Provincial Life* <Brownstein>

4. Mithraic temples often included a mysterious nude snake-entwined figure holding two keys who had the head of one of these animals. A knight wins back his wife Laudine (loh-DEEN) after rescuing one of these creatures from a dragon and befriending it. After killing an asura while in the form of a boar, Vishnu killed the asura's elder brother Hiranyakashipu (hee-rah-n-yahk-SHIH-poo) by taking a form that was half-man, half one of these creatures. Yvain (ee-VAIN) was known as the "Knight of" this animal, while the avatar (*) Narasimha had the head of one. In a Greek folktale, one of them hiding in a cave becomes friendly after Androcles (ANN-droh-kleez) pulls a thorn from its paw. A creature with the body of one of these animals kills itself after Oedipus provides the answer "man" to its riddle. For 10 points, the Sphinx had the body of what large feline?

ANSWER: lions [prompt on big cats] <Carson>

5. A locomotive passes by one of these animals in a notable diamond-shaped postage stamp from the short-lived Tuvan People's Republic. Despite being more commonly used with elephants, the name of an object called a *howdah* derives from its use with these animals, which inhabit a reserve around the dried-up lake of Lop Nur. The use of this animal's urine in medicine may have helped spread the MERS virus. A train from (*) Darwin to Adelaide is named "the Ghan," honoring Afghan traders who popularized this animal in Australia, which currently has the largest feral population of them. The less common of this animal's two species is restricted to the Gobi Desert and is named after Bactria. For 10 points, name this animal which stores fat, not water, in its humps.

ANSWER: camels [or Camelus; accept Camelus dromedarius or Camelus bactrianus] <Shimizu>

6. This dynasty and its successor made the *taotie* (tao-t'YEH) motif, which depicts a hideous ogre. Its conquered land was ruled by Guanshu, Caishu (TSAI-shoo), and Huoshu (HWOH-shoo), three guards who instigated a namesake revolt against a duke shortly after this dynasty fell. In 1976, the relatively intact tomb of Fu Hao, a consort of one of this dynasty's rulers, was discovered. This dynasty, which was centered on the city of Anyang, lost power after its (*) "immoral" King Zhou (joh) was defeated at the Battle of Muye (moo-YEH). Tortoise shells and oxen scapulae were used by this dynasty to create oracle bones. Bronze pottery was produced by this dynasty, which succeeded the legendary Xia (shyah) dynasty. For 10 points, name this first historically attested Chinese dynasty, which took control in the 18th century BC.

ANSWER: Shang Dynasty <Jose>

7. A valley containing one of these areas is where Bata places his heart for Anpu to find in the ancient Egyptian story "Tale of Two Brothers." While traveling through one of these places, a character positively interprets another's dream about a mountain falling on them. A resident of an area of this sort is wearing only one of his seven layers of "splendour" when he is immobilized by seven winds sent by the sun god Shamash. Because he helps kill that (*) guardian of this sort of place, then helps defeat the Bull of Heaven, Enkidu is sentenced to death. The monster Humbaba resides in this sort of habitat in the *Epic of Gilgamesh*. In the Bible, King Solomon obtains materials for the Temple from one of these places in Lebanon. For 10 points, name this sort of area where cedars grow.

ANSWER: cedar forests <Brownstein>

8. Walter Scott's *Lady of the Lake* provided the text for this man's Opus 52, the most popular section of which is titled "Ellens dritter Gesang" (guh-ZONG) and begins with the name of a Latin prayer. One of this man's works opens with the piano playing repeated octave triplets to represent a horse galloping.

Another of his works has the pianist use one hand to represent a foot pushing a treadle while the other depicts the rotating title object, while the title character reminisces about (*) Faust. This composer of *Ave Maria* included "Der Lindenbaum" and "The Hurdy-Gurdy Man" in the second of his song cycles based on Wilhelm Müller poems, *Winterreise* (VIN-ter-RYE-zuh) . For 10 points, name this Austrian composer of "Der Erlkönig" (AIRL-ker-nig) and "Gretchen at the Spinning Wheel", two of his six hundred-plus *lieder*.

ANSWER: Franz Schubert [or Franz Peter Schubert] <Carson>

9. For one of these events, Taro Okamoto created the sculpture *Tower of the Sun*, whose interior depicts a *Tree of Life* that represents the evolution of animals. Seven varieties of red were used to decorate an inverted pyramid shaped-building designed for one of these events in Shanghai in 2010. A modular concrete housing complex designed by Moshe Safdie was used as a location for an event of this type that also featured (*) Buckminster Fuller's Biosphere. The first of these events took place in the interior of Joseph Paxton's Crystal Palace, and Gustav Eiffel engineered a tower for one that happened in 1889. Daniel Burnham's "white city" plan was created for the 1893 Chicago iteration of, for 10 points, what events exhibiting the technology and progress of many nations?

ANSWER: World's Fair [or world's exposition; or universal exposition; or international exposition; or international exhibition; or Great Exhibition; or World's Columbian Exposition; prompt on exposition or exhibition] <Jose>

10. This phenomenon's namesake "wedge" appears red in color due to backscattering from a light source whose zenith angle is in between 10 and 20 degrees. The scientific term for "God rays," in which rays stream through clouds, takes their name from this phenomenon. Animals are classified as "matutinal" or "vespertine" depending on whether they are active during this period of time. The "nautical" definition for this period of time states that it begins or ends when the (*) Sun is 12 degrees below the horizon. The adjective crepuscular refers to this period of time, which in the morning occurs after a dawn but before a sunrise. For 10 points, name this period of time in which the Sun is not visible but is still illuminating the Earth, exemplified by the period immediately preceding dusk.

ANSWER: twilight <Jose>

11. In Orthodox churches, the observation of this holiday involves a reading of the Catechetical Homily of St. John Chrysostom. The tables of Dionysius Exiguus have been used to resolve a controversy surrounding this holiday. On the day before this holiday, the miraculous Holy Fire is said to appear at the Church of the Holy Sepulcher. A service held on this holiday involves lighting a "new fire," which is used to light a candle inscribed with a cross, the current year, and the Greek letters (*) alpha and omega. This holiday's vigil involves singing the Exsultet. The *computus* is used to calculate this holiday's date, which was once determined using the date of Passover. Many Christians fast for the 40 days that precedes, for 10 points, what holiday that celebrates the resurrection of Jesus?

ANSWER: Easter Sunday [or Pascha] <Cheng>

12. An 1854 act named for this place created the Hebdomadal Council and opened it to dissenters. Archbishop of Rochester Walter de Merton was a prominent donor to this place. The Press Licensing Act mandated that a copy of every printed book be placed in its Bodleian Library. This institution lends its name to a 19th century movement led by Edward Pusey and John Henry Newman which sought to make the Church of England more Catholic. Nicholas (*) Ridley, Hugh Latimer, and Thomas Cranmer were burnt at the stake on the grounds of this institution. Cecil Rhodes established a program intended to attract international youths to this institution, which started issuing degrees to women in 1920. For 10 points, name this prestigious English university, a rival of Cambridge.

ANSWER: University of Oxford [or Oxford University; accept first line buzzes of Oriel College or Somerville College] <Bentley>

13. For ideal solutions, a form of this statement can be derived simply by summing the Lewis–Randall rule over every species. Arnold Beckman's original pH meter worked by solving this equation for proton concentration. The discoverer of this equation invented a better incandescent lamp than Thomas Edison's and won a Nobel Prize for discovering the Third Law of Thermodynamics. A variant of this equation in (*) biochemistry only considers sodium, potassium, and chlorine ions and includes a coefficient of 61.5 millivolts across the plasma membrane. This equation predicts that free energy depends on RT times the log of the reaction quotient, but first divides each term by nF to get units of volts. For 10 points, name this equation that gives the redox potential of a galvanic cell.

ANSWER: Nernst equation <Silverman>

14. This man founded a whiskey distillery named after a local strain of moonshine, Valley Tan. In exchange for a presidential pardon, this man stepped down from one of his positions in favor of Alfred Cumming. Juanita Brooks argued that this man scapegoated John D. Lee and obstructed federal investigation of his men killing the Baker-Fancher party. This President of the (*) Quorum of the Twelve Apostles instituted a ban on black men receiving traditional blessings, a practice that persisted till 1978. A monument stands at the alleged site where this leader said "this is the place" that his people would settle; a vision told him to "make the desert blossom like a rose" at that location, Deseret. For 10 points, name this Mormon leader who led his people's migration to modern-day Utah.

ANSWER: Brigham Young <Aggarwal>

15. In one passage, this process is caused by things like a starched napkin, a clattering spoon, and some uneven paving stones. This phenomenon occurs at the end of a chapter in which the narrator's magic lantern makes him fear going to sleep without his mother's kiss. This phenomenon produces *moments bienheureux* (moh-MON bee-ANN-urr-oo) in a novel that it titles in C. K. Scott-Moncrieff's translation. A notable description of this (*) mental phenomenon occurs at the end of a chapter beginning "For a long time, I went to bed early" and is followed by the "Combray" chapter. The narrator experiences the "involuntary" form of this process after he eats a tea-soaked madeleine of the sort he'd eaten as a child. For 10 points, Marcel Proust's *In Search of Lost Time* has been titled for what mental faculty "of things past"?

ANSWER: involuntary memory [or remembrance] <Brownstein>

16. The subject of one of these paintings appears before a background of "pale veronese green" in a painting made after the artist received a similar work by Emile Bernard. The subject of another of these paintings wears a blue cap trimmed with black fur and stands in front of an easel and a Japanese print of three women. The subject wears a straw hat in one of them that was painted on the back of *The Potato Peeler*. The ones made in (*) Saint-Rémy depict their subject from the left, and they all depict the brother of an art dealer named Theo. The most famous of these paintings depicts the aftermath of an event in which their subject gave an unusual gift to an Arles prostitute. For 10 points, name these paintings, one of which depicts its artist with a bandaged ear.

ANSWER: self-portraits of Vincent Van Gogh [prompt on portraits of Vincent Van Gogh; prompt on self portraits] <Bentley>

17. While sticking her head out of a giant one of these objects, Signora Zenobia is decapitated in Edgar Allan Poe's story "A Predicament". John C. Taylor designed one of these things at Corpus Christi College that features a locust-like sculpture that serves as a very literal version of its grasshopper escapement. A 2010 installation created by Christian Marclay consists of a looped montage of scenes focusing on these objects. A water-based ancient (*) Greek example of these things is the *klepsydra*. John Harrison designed one that allowed the accurate measure of longitude, while Christiaan Huygens invented the first one that made use of a pendulum. For 10 points, name these devices, primitive examples of which include sundials and hourglasses.

ANSWER: clocks [accept chronometer or watch or other specific types of clock; accept a clock face until "locust" is read] <Jose>

18. A Cooper pair is created to satisfy this statement in Andreev (on-DRAY-eff) reflection. This statement is a consequence of the symmetry of a wavefunction with respect to rotation, since the U(1) gauge (U-one gayj) is invariant upon scalar addition. The continuity equation equivalent to this law says that the current density is divergence-free at steady-state. This law explains why inserting a dielectric into a capacitor changes voltage by the same factor as the capacitance. Kirchhoff's (*) first rule, a consequence of this law, requires that current into a junction equals current out of it. This law explains why two surfaces rubbed together will attract each other. For 10 points, name this law, the basis of static electricity, which states that the total number of Coulombs in a system is constant.

ANSWER: law of conservation of charge [or electric charge conservation; prompt on partial answer] <Silverman>

19. The protagonist of a story by this author is embarrassed at once having stolen a butcher's tricycle with Lorraine Quarrles, who hounds him for the address to his hotel. Another of his protagonists declares that "Everybody's youth is a dream, a form of chemical madness," after escaping the demolition of a mountain in the wake of a failed bribe to God. This author wrote a story in which a man loses custody of his daughter (*) Honoria after locking his wife out in the snow. In a long story by this author of "Babylon Revisited," Percy Washington invites John Unger to his family's palatial off-the-grid estate built near a massive gemstone in Montana. For 10 points, name this author of "The Diamond As Big as the Ritz" and Jazz Age-evoking novels like *Tender is the Night*.

ANSWER: F. Scott Fitzgerald [or Francis Scott Key Fitzgerald] <Gupta>

20. A 1963 work of anthropology argues that a form of agriculture making use of this stuff developed alongside the cultivation of rice paddies in Indonesia. Rhys Jones described an Aboriginal Australian practice in which "sticks" of this stuff were used by farmers to change the ecological composition of their landscape. In Clifford Geertz's *Agricultural Involution*, a form of agriculture making use of this stuff called (*) *swidden* is discussed; that usage of this stuff involved shifting cultivation of different fields and was sometimes preceded by so-called "slashing." The discoloration of rocks suggest that flint has been used to help create this stuff in hearths in caves during the Paleolithic. For 10 points, name this source of warmth that was first used by *Homo erectus*.

ANSWER: fire [or obvious equivalents] <Jose>

21. In Victor Erice's (eh-REE-say's) *The Spirit of the Beehive*, Ana sees the reflection of a character from this film while kneeling by a creek. Kenneth Strickfaden built a device called "Megavolt Senior" to create electrical effects in this film. Before this movie, Edward van Sloan delivers a speech warning "It may shock you. It might even horrify you." In a long-censored scene, a character tosses flowers into a lake with a girl named Maria, after which he throws Maria into the lake, drowning her. The title character's (*) hunchbacked assistant Fritz accidentally steals a murderer's brain from Dr. Waldman. The title character shouts "It's alive! It's alive!" as his creation first moves its hand. For 10 points, name this pre-Code horror movie in which Boris Karloff plays a monster reanimated by the title doctor.

ANSWER: Frankenstein <Kothari>



PACE NSC 2017 - Round 05 - Bonuses

1. Answer the following questions about Diophantine equations, for 10 points each.

[10] Diophantine equations only have solutions in this set of numbers. Taking the quotient of each pair of this set of numbers produces the rational numbers.

ANSWER: **integers** [accept **\mathbb{Z}**]

[10] Many Diophantine equations can be solved through the application of this theorem. This theorem states that if a and b are relatively prime integers, and if x and y are any integers, then there exists an integer n such that n is congruent to x modulo a and n is congruent to y modulo b .

ANSWER: **Chinese remainder** theorem [or **Chinese** theorem; or **Chinese** hypothesis]

[10] The 10th problem posed by this German mathematician in 1900 is the question of whether there is a universal algorithm for solving Diophantine equations.

ANSWER: David **Hilbert** <Aggarwal>

2. The last of these poems opens "Midwinter spring is its own season / Sempiternal though sodden towards sundown", and proceeds to describe the Battle of Britain. For 10 points each:

[10] Name this set of poems whose individual sections, including "Little Gidding" and "Burnt Norton," each correspond to a classical element.

ANSWER: **Four Quartets**

[10] This author intended each poem of the *Four Quartets* to have a similar structure to his earlier poem *The Wasteland*; each of those poems are divided into five parts.

ANSWER: Thomas Stearns **Eliot** [or T. S. **Eliot**]

[10] Eliot hinted that he wanted to be buried at Parish Church of St. Michael by writing "In my beginning is my end" in this second poem from the *Four Quartets*, whose title refers to a small English community.

ANSWER: "**East Coker**" <Jose>

3. In the late 16th century, shipbuilders from this country developed a new type of ship called a *fluyt* (**flout**) that was relatively slow, but capable of transporting grain cheaply between its ports and the Baltic. For 10 points each:

[10] Identify this one-time maritime power. Its colonies included Suriname and New York prior to its control by the British.

ANSWER: The **Netherlands** [accept **Holland**]

[10] Fluyts were cheaper than this other type of ship, since they could not be converted into war vessels. These large, multi-decked sailing ships were used by the Spanish to trade silk in Manila for silver from Acapulco.

ANSWER: **galleons**

[10] This Venetian shipyard lost prominence in the 16th century due to its failure to master galleon-building. Earlier, this shipyard had mass-produced the galleys that the Holy League used in the Battle of Lepanto.

ANSWER: Venetian **Arsenal** [or **Arsenale** di Venezia] <Bentley>

4. This artist gave the name of American dancer Loie Fuller to a cloud in the upper left of his painting *Antibes, The Pink Cloud*. For 10 points each:

[10] Identify this French painter of *The Dining Room* who put opus numbers on his canvases. The art critic Felix Feneon holds a flower in front of a trippy background in a portrait by this artist.

ANSWER: Paul Victor Jules **Signac** (sin-YAHK)

[10] Signac described his paintings in *this* style as like listening to a full symphony rather than just the brass section. Paintings in this style pioneered by Georges Seurat (surr-AH) are made up from individual dots of color.

ANSWER: **pointillism** [or **divisionism**; accept word forms like **pointillist**]

[10] In 1888, Signac exhibited with a group from this country that formed after the painting *The Oyster Eater* was rejected from a salon. This country was the birthplace of James Ensor, who depicted Christ entering its capital largely unnoticed amongst a large parade.

ANSWER: **Belgium** [accept the Kingdom of **Belgium** or Koninkrijk **België** or Royaume de **Belgique**]

<Bentley>

5. John Gray used the term "agonistic liberalism" to describe this philosopher's commitment to liberalism despite the clash of value systems. For 10 points each:

[10] Name this political philosopher who wrote *The Crooked Timber of Humanity*. He analyzed Tolstoy's view of history in "The Hedgehog and the Fox."

ANSWER: Isaiah **Berlin**

[10] In "Two Concepts of Liberty," Berlin contests this philosopher's claim that negative liberty is necessary for individual genius to flourish. This writer of *On Liberty* also wrote *Utilitarianism*.

ANSWER: John Stuart **Mill**

[10] An essay in Berlin's *Against the Current* traces the scandalous power of this philosopher's political writings, including *Discourses on Livy*. Berlin concludes that this man saw a clash between Christian and pagan virtue.

ANSWER: Niccolò **Machiavelli** <Kothari>

6. This quantity can be calculated for nonuniform objects by integrating the mass density times the radius squared over each differential volume element. For 10 points each:

[10] Name this quantity that generally equals an object's mass, times a characteristic dimension squared, times a fraction between zero and one.

ANSWER: **moment of inertia** [or **rotational inertia**]

[10] For instance, the moment of inertia of a uniform rod about a perpendicular axis through its middle equals the rod's length squared, times its mass, times this fraction.

ANSWER: **one-twelfth** [or **1/12**]

[10] The moment of inertia will always be minimized about an axis that passes through this point. On Earth's surface, the gravitational force is usually placed at this location.

ANSWER: **center of mass** <Silverman>

7. These places contained barracks where slaves were chained up each night called ergastula. For 10 points each:

[10] Identify these large agricultural estates that Pliny the Elder claimed "have ruined Italy and are now ruining the provinces." These estates were larger than villas.

ANSWER: **latifundia** [or **latifundium**]

[10] Since land ownership was the most respectable way to acquire wealth, many members of this Roman political body owned latifundia. This chief legislative body of the Roman Republic had around 900 members by Julius Caesar's time.

ANSWER: Roman **Senate** [or **Senatus Romanus**]

[10] The Lex Claudia encouraged land ownership among the Senatorial class by restricting the size of these objects that Senators could own. These objects were used in *naumachia*, massive gladiator battles that occurred in special basins.

ANSWER: **ships** [or **boats**] <Bentley>

8. A stone arch in Grant Park and the trading floor and entrance, both of which are in the AIC, are some of the only surviving parts of this man's old Chicago Stock Exchange building. For 10 points each:

[10] Name this architect whose many collaborations with his partner Dankmar Adler include Chicago's Auditorium Building and the Guaranty Building in Buffalo.

ANSWER: Louis Henry **Sullivan**

[10] Sullivan and Adler's Wainwright Building in St. Louis is often said to be one of the first buildings referred to by this term, which now generally refers to buildings with at least 40 floors, such as the Chrysler and Empire State Buildings.

ANSWER: **skyscrapers**

[10] Later in life, Sullivan designed a group of buildings used for this purpose that are now called his "jewel boxes". The first of them, in Owatonna, Minnesota, is clad in red brick with green terracotta accents.

ANSWER: **banks** [or **savings and loan** buildings] <Jose>

9. An author committed suicide by throwing himself down a stairwell shortly after completing an essay collection about this place titled *The Drowned and the Saved*. For 10 points each:

[10] Name this specific place, the setting of Primo Levi's *If This is a Man*. It is also the main setting of a book in which residents of the town of Sighet repeatedly ask "Where is God?"

ANSWER: **Auschwitz**-Birkenau

[10] That book is this Holocaust memoir by Elie Wiesel (ELL-ee vee-ZELL), which was followed by sequels titled *Dawn and Day*.

ANSWER: **Night** [accept ***Un di Velt Hot Geshvign*** or ***La Nuit***]

[10] The narrator describes the two meals of "coffee" and "soup" he receives in Auschwitz in *Fatelessness*, a Holocaust novel by an author from this country. *Embers* and *The Door* are recently re-popularized novels from this country home to the author of *Satantango*.

ANSWER: **Hungary** [or **Magyarország**] <Brownstein>

10. Answer the following about Emperor Augustus's religious reforms, for 10 points each.

[10] Suetonius (**sweh-TOH-nee-uss**) notes that Augustus revived this February festival, whose celebrants sacrifice goats, then don strips of the goatskin while running a circuit around the Palatine Hill that started and ended in a cave.

ANSWER: **Lupercalia** [prompt on **Februa**]

[10] Horace was commissioned to write a hymn for Augustus's revival of this three-day celebration, which included sacrifices on the Campus Martius and was held every 110 years, a period representing the longest possible human lifespan.

ANSWER: the **Secular Games** [or **Ludi Saeculares**; accept **Ludi Tarentini**]

[10] Augustus also established a cult, complete with a temple in his namesake Forum, dedicated to the "Avenger", or "Ultor", aspect of this Roman god of war.

ANSWER: **Mars** [do not accept or prompt on "Ares"] <Carson>

11. This country's mineral wealth gave it the highest rate of economic growth in the world for the period spanning 1966 to 1980 and backed its relatively strong currency, the pula. For 10 points each:

[10] Identify this country African country whose first post-independence President was Seretse Khama. It emerged from the Bechuanaland Protectorate.

ANSWER: **Botswana** [or Republic of **Botswana**]

[10] Colonial officials from this country prevented Seretse Khama from ruling over Bamangwato because he had married a white woman also from this country. This empire won the Boer War.

ANSWER: **United Kingdom** [or Great **Britain**; or **England**]

[10] From 1895 to 1964, Bechuanaland was administered from this city outside of its borders. A word derived from this city meaning "to celebrate uproariously" was coined by British citizens exuberant that Lord Baden-Powell survived a long siege here in the Second Boer War.

ANSWER: **Mafeking** [or **Mafikeng**] <Bentley>

12. Soviet-era censors often replaced excerpts from the melody of "God Save the Tsar" in this piece with another composer's chorus "Glory, Glory to You, Holy Rus'" (**rooce**). For 10 points each:

[10] Name this festival piece by Pyotr Ilyich Tchaikovsky in which fragments of "La Marseillaise" (**mar-say-EZ**) are "chased off" by Russian cannon shots, a celebration of Russia's successful defense against Napoleon's invasion in the title year.

ANSWER: the **1812 Overture** [or *The Year 1812*]

[10] One should take care not to confuse the *1812 Overture* with this other Tchaikovsky piece, which also had its repeated quotations of "God Save the Tsar" replaced by the same melody. Unlike the *1812 Overture*, it quotes from a pair of Serbian folk songs as well.

ANSWER: **Marche slave** (marsh slahv) [accept **Slavonic March**, **Slavic March**, or **Serbo-Russian March**]

[10] "Glory, Glory to You, Holy Rus'" comes from this other Russian composer's opera about Ivan Susanin (**ee-VON soo-SAH-nin**), *A Life for the Tsar*.

ANSWER: Mikhail Ivanovich **Glinka** <Carson>

13. Answer the following about buried giants in mythology, for 10 points each.

[10] The giant Norse god Buri was buried in a block of salty ice until he was gradually licked out by Audhumla, one of these creatures. Io was transformed into one of these animals, while Hathor was often depicted with the head of one.

ANSWER: **cows** [prompt on cattle; do not accept or prompt on "bulls"]

[10] Most stories of the Gigantomachy depict Athena facing off against this giant, who is eventually buried under Mount Etna on Sicily.

ANSWER: **Enceladus**

[10] This figure recovers the three missing words he needs for a spell by waking the buried giant Antero Vipunen, then punching him in the stomach. After a newborn baby mocks this character for his sins, he sails away in a copper boat.

ANSWER: **Väinämöinen** (vay-na-MOY-nen) <Carson>

14. The two approaches to this field are classified as either top-down or bottom-up, depending on if enzymatic degradation occurs before mass spectrometry. For 10 points each:

[10] Name this field of chemical biology that aims to characterize all the proteins in an organism.

ANSWER: **proteomics** [or **proteome**]

[10] The first "-omics" (OH-mix) field was genomics, which was spurred on by technological improvements to this process in the 1990s that enabled the HGP. In this process, a DNA molecule is read to determine the order of its nucleotides.

ANSWER: DNA **sequencing**

[10] Transcriptomics, a more recent -omics field, aims to characterize all of these other molecules produced in a cell via next-gen sequencing. In eukaryotes, these molecules are capped at the 5-prime end.

ANSWER: **mRNAs** [or **messenger RNAs**; or **messenger ribonucleic acids**; prompt on RNAs or ribonucleic acids] <Silverman>

15. Answer the following about broader notions of art in modern American poetry, for 10 points each.

[10] This poet advised: "Accept the fluster / of lost door keys, the hour badly spent," in her villanelle declaring that "The art of losing isn't hard to master," titled "One Art."

ANSWER: Elizabeth **Bishop**

[10] This poet boasted that "Dying / Is an art, like everything else. / I do it exceptionally well" in her poem "Lady Lazarus," which shares the Holocaust imagery of her poem "Daddy."

ANSWER: Sylvia **Plath**

[10] The protagonist of Ezra Pound's long poem "Hugh Selwyn Mauberley" strove, "for three years, out of key with his time," to "resuscitate" this dead art.

ANSWER: **poetry** [or writing **poems**; or **verse**; accept equivalents] <Gupta>

16. Identify the following about African American travel before the Civil Rights era, for 10 points each.

[10] This is the name given to the mass movement of African Americans from the South to northern cities such as Detroit, Milwaukee and Baltimore in the early 20th century. A second period of this name began in the 1940s.

ANSWER: First **Great Migration**

[10] A "Negro Motorist" book of this color, also the surname of the author, offered African Americans tips on avoiding sundown towns and finding places to stay. The book of this name was distributed at many Esso stations.

ANSWER: **green** [or **Green** Book; or *The Negro Travelers' **Green** Book*]

[10] The Freedom Riders sought to force the government to adhere to the desegregation standards of the *Morgan* and *Boynton* cases, both originally filed in this state. Another case originating in this state struck down anti-miscegenation laws in 1967.

ANSWER: **Virginia** <Bentley>

17. Name some things about electron counting, for 10 points each.

[10] The simplest principle for counting electrons is that all atoms are most stable when they have eight total valence electrons, a rule given this appropriate name.

ANSWER: **octet** rule

[10] The octet rule gets thrown in the trash when dealing with coordination complexes, which prefer to have this many valence electrons instead, since they follow the octet rule *and* have a full d subshell, too.

ANSWER: **eighteen** [or **18**; accept the **eighteen**-electron rule]

[10] The mno electron-counting rules are helpful for predicting the structure of compounds of this element, which forms skeletal polyhedra in compounds where it is bonded only to hydrogen.

ANSWER: **boron** [or **B**] <Silverman>

18. This author described an animal that was "little or nothing of life" that flutters "side to side of his square of the window pane" in the essay "The Death of a Moth." For 10 points each:

[10] Name this author who stated that "life is not a series of gig lamps symmetrically arranged," but an "incessant shower of innumerable atoms" in the essay "Modern Fiction."

ANSWER: Virginia **Woolf** [accept Adeline Virginia **Woolf** or Adeline Virginia **Stephen**]

[10] As she advised in "Modern Fiction," Woolf examined an "ordinary mind on an ordinary day" in this novel whose title woman reminisces about her life as she prepares to host a party.

ANSWER: **Mrs. Dalloway**

[10] Woolf's other non-fiction includes this essay, which discusses the difficulties faced by women writers by imagining Shakespeare's sister, Judith, being unable to develop her talent because she receives no education and is forced into marriage.

ANSWER: *A **Room of One's Own*** <Jose>

19. The tobacco industry isn't the only industry to suppress potentially damaging internal research. For 10 points each.

[10] In 2012, Cristin Kearns and Gary Taubes broke the news that, starting in the 1950s, executives from this industry funded Frederick Stare's research overemphasizing the negatives of saturated fat. Domino Foods is a major player in this industry.

ANSWER: sugar [accept the sugar industry or Big Sugar]

[10] A 2015 Inside Climate News expose broke the story about how this company, also responsible for the Valdez oil spill, suppressed climate change research.

ANSWER: ExxonMobil

[10] During the 2015 Paris Climate Conference, this environmental activist held a mock trial for Exxon which, unsurprisingly, found the company guilty. This founder of 350.org edited *The Global Warming Reader*.

ANSWER: Bill McKibben [or William Ernest McKibben] <Bentley>

20. A recent commentary on this economist's *magnum opus* by Robert Solow is titled "[this economist] is Right." For 10 points each:

[10] Name this giant of inequality studies whose recent tome *Capital in the Twenty-First Century* touted a wealth tax to combat extreme concentration of wealth at the top.

ANSWER: Thomas Piketty

[10] In the essay collection *After Piketty*, which contains Solow's commentary, Paul Krugman asserts that we are in a "new" period with this name. This name was coined by Mark Twain and Charles Dudley Warner to refer to a period of post-Civil War American greed.

ANSWER: The Gilded Age

[10] A 2017 paper by Martha Olney and Aaron Pacitti linked inequality growth to slow jobless recoveries, which they argued is caused by the decline of the manufacturing sector and the attendant rise of this other economic sector since the 1970s.

ANSWER: services [or service sector; or tertiary sector] <Aggarwal>

21. The speaker enters this place "dreaming of [the] enumerations" of Walt Whitman. For 10 points each:

[10] Identify this title location where Whitman is seen "poking among the meats in the refrigerator and eyeing the grocery boys."

ANSWER: A Supermarket in California

[10] "A Supermarket in California" is a poem by this Beat poet who declared "I saw the best minds of my generation destroyed by madness, starving hysterical naked" in "Howl".

ANSWER: Allen Ginsberg [or Irwin Allen Ginsberg]

[10] The speaker of "A Supermarket in California" asks this author "what were you doing down by the watermelons". One of this author's poems repeats the refrain, "At five in the afternoon".

ANSWER: Federico García Lorca [prompt on Lorca] <Bentley>