



NASAT 2015 - Round 18 - Tossups

1. The Aufbau reaction, which forms a complex of this element and six total ethyl groups, avoids termination and branching in the synthesis of polyethylene. This element is alloyed to nickel in Raney nickel. Its oxides are commonly dipped into a conducting sulfuric acid bath in the process of anodization. Gibbsite is this element's hydroxide, and this element is oxidized in the thermite reaction. Unusually, this metal's oxidation state is almost exclusively +3, and it is the lightest metal found in the p-block. Industrial production of this element proceeds by electrolysis of cryolite and its molten oxide. For 10 points, name this element produced in the Hall-Heroult process from bauxite.

ANSWER: aluminum [or Al] <Silverman>

2. To create a painting featuring these animals, an artist repeatedly visited the Boulevard l'Hopital dressed as a man. Influenced by a similar painting by Sawrey Gilpin, Eugene Delacroix made a watercolor painting of one of these animals frightened by lightning. An engraving depicting the skeleton of one of these animals, titled for their "anatomy," was made by George Stubbs. Rosa Bonheur is best known for a painting depicting these animals in a "fair." One of these animals peeks from behind a curtain in Henry Fuseli's *The Nightmare*. Edgar Degas and Theodore Gericault created many paintings of these animals, the latter in such canvases as *The Derby at Epsom*. For 10 points, name these animals found in equestrian portraits.

ANSWER: horses <Lee>

3. In this place, a man interrupts a speech to inquire about a force "whose talons grasp the blessings of the world." A denizen of this place speaks the cryptic line, "Pape Satan, pape Satan aleppe." Several beings in this place run in semicircles around a ring before ramming each other with large weights. A long discourse on the nature of fortune is delivered by Virgil in this place, where many popes and cardinals reside. This realm is presided over by either Pluto or Plutus, and its residents include the prodigal, who are guilty of squandering, and the avaricious, who hoard. For 10 points, name this circle of Hell filled with those who have committed the sin of greed.

ANSWER: the Fourth Circle [prompt on the Inferno; prompt on Hell] <Gupta>

4. In this play, a servant salutes to "liberty, honour, and Fleet-Street for ever!" after a man orders him to drink heavily. An illiterate character in this play tells a hiding woman that he will cough if there is danger, and then unintentionally starts coughing, ruining the illusion that he had driven her to "Crackskull Common" when he had actually driven in circles. The question of whether that man in this play is "of age" decides this play's secondary romance between Constance Neville and George Hastings. In this play, Tony Lumpkin steals jewels from his mother and falsely claims that his home is an inn, allowing Kate Hardcastle to win Marlow over by disguising herself as a barmaid. For 10 points, name this comedy by Oliver Goldsmith.

ANSWER: **She Stoops to Conquer** <Yu>

5. In this city, a prayer session was interrupted when Jenny Geddes threw a stool at a local dean, starting a massive riot at St. Giles. A document that was signed in this city at the church of Greyfriars was resisted by the Marquis of Huntly, George Gordon. Part of its defensive fortifications include the Telfer Wall and the Netherbow Port, which is located along this city's Royal Mile. Monarchs who ruled from this city usually lived at Holyrood Palace. A legislative body in this city was disestablished following the Acts of Union, which joined this city's country with a southern neighbor. For 10 points, name this largest settlement in the region of Lothian, the capital city of Scotland.

ANSWER: **Edinburgh** <Clarke>

6. This man designed chimneys resembling rows of huge helmeted heads, whose frightening appearance gives them the nickname "witch scarers." This architect often topped his designs with four-armed crosses. A turret representing Saint George's lance is on one of his buildings nicknamed the "house of yawns" for the mouth-like moldings around its lower windows. This architect incorporated wrought-iron balconies and a self-supporting, undulating stone facade into one of his designs. He used broken tiles called *trencadis* in a mosaic-decorated park for his patron, Eusebi Guell, and planned eighteen spires for an as-yet-uncompleted church. For 10 points, name this architect who designed the Casa Mila and Sagrada Familia in Barcelona.

ANSWER: Antoni **Gaudi** i Cornet <Yu>

7. In one work, this thinker explained twelve reliable and twelve unreliable signs that a religious action is a true result of God's converting grace. He described how the joy of grace created a "new light" in *A Faithful Narrative of the Surprising Work of God*. A work by this man begins with the quotation "Their Feet shall slide in due Time." This author of *Religious Affections* outlined "ten considerations" in that work, which exhorts "let everyone that is out of Christ now awake," and was delivered at Enfield, Connecticut. That sermon claims that only "the mere pleasure of God" keeps wicked men from being held, like a spider, over the pit of hell. For 10 points, name this theologian of the First Great Awakening who wrote "Sinners in the Hands of an Angry God."

ANSWER: Jonathan **Edwards** <Kothari>

8. An empirical approximation for this force includes a term for one hundred over the Hazen-Williams constant, all raised to the 1.85 power. The magnitude of this force is often expressed as a factor K times v squared over two g , as seen in the full Colebrook equation. A factor measuring this force exactly equals 16 over the Reynolds number if the Reynolds number is small. The nondimensional "epsilon over diameter" is plotted against Reynolds number on a Moody plot to estimate Fanning's factor to measure this force. It usually provides the error between both sides of the Bernoulli equation. Long, straight, rough pipelines require pumps to counteract head losses due to it. For 10 points, name this force that opposes the motion of fluids in pipes.

ANSWER: pipe **friction** [prompt on pressure head **losses** or pipe **roughness**] <Silverman>

9. An early example of this system, which connected San Pablo Bay with its namesake California city, was the Sonoma Prismoidal. Louis Brennan patented a system of this type for military use which employed a pair of gyroscopes. A suspended version of this technology designed by Eugen Langen in Wuppertal is the oldest of them still in use today. In 2013, one of these systems circling Darling Harbour in downtown Sydney was shut down, and it has been criticized for the difficulty of providing branching service. American examples of this technology include a Seattle system that opened for the 1962 World's Fair and one connecting the casinos of the Las Vegas Strip. For 10 points, name this ever-futuristic type of train that runs on a single beam.

ANSWER: **monorails** [prompt on **train** systems until "train" is read] <White>

10. This man was the *second-to-last* ruler covered in an 80-book history by Cassius Dio, who lived through this man's reign. A coin minted by this emperor shows a chariot carrying a sacred black stone away from Emesa in Syria, this man's childhood home. This man, who was made emperor by his grandmother Julia Maesa at age fourteen, allegedly married a Vestal Virgin and gained a reputation for extremely decadent acts before his murder and replacement by Alexander Severus four years later. This man took a name from the non-Christian singular deity he forced Romans to worship instead of Jupiter. For 10 points, name this Roman emperor from 218 to 222 CE, a devotee of a unary sun god.

ANSWER: **Elagabalus** [or **Heliogabalus**; or Marcus Aurelius Antoninus Augustus **Elagabalus**; do not accept or prompt on "Marcus Aurelius"] <Jackson>

11. This is the highest number in the figured bass *abbreviation* for a second-inversion dominant seventh chord. To turn a major scale into the corresponding Lydian mode, the scale degree of this number is raised by a semitone. Inverting a perfect fifth produces this interval which, besides the unison, is the smallest perfect interval. The scale degree of this number is the subdominant. It is the number of flats in F minor and the total number of spaces between the lines of a standard music staff. This is the number of beats in a measure of the most common time signature, the number of movements in a standard symphony, and the number of quarter notes in a whole note. For 10 points, give this number of hands that play in a piano duet.

ANSWER: **four** [or **fourth**; or **perfect fourth**; or **IV**] <Kim>

12. Self-consistent numerical models of this process were created by Kuang and Bloxham, Kageyama and Sato, and—most famously—Glatzmaier and Roberts. Many models of this process fail to produce westward drift in the secular variation. The alpha effect's transformation of a toroidal field to a poloidal field is important to understanding this process. Cowling's theorem forbids this process from producing an axisymmetric field. Adjusting the Prandtl number in simulations of it reveals the impact of the Coriolis effect on pole reversals. This self-sustaining process results from convective circulation of liquid iron and nickel by thermal buoyancy, which induces an electrical current. For 10 points, identify this process in the Earth's outer core that generates the Earth's magnetic field.

ANSWER: core **dynamo** [or **geodynamo**; prompt on core **convection** or the process that creates the planetary **magnetic fields** or obvious equivalents of that set] <Voight>

13. Augustine claimed the opposite of this property did not exist in its own right, but only as a lack of this. Immanuel Kant argued there was nothing in the world that had this property intrinsic to it except this type of will. A later thinker argued that previous attempts to define this property as analytically equivalent to another led to tautologies, and thus this property was undefinable. In *The Republic* Socrates compares the Form of this property to the sun, as it makes it possible for the philosopher to perceive all other Forms. G.E. Moore compared it to the color yellow in *Principia Ethica*. For 10 points, name this property of things contrasted with evil.

ANSWER: **goodness** <Bailey>

14. This author taught writing classes at Sing Sing that helped him gather material for a novel about a convict who suffers from methadone withdrawal and has a love affair with another prisoner named Jody. In a story by this author, a housewife hysterically concludes, "Life is too terrible, too sordid and awful," before asking her husband, "We're happy, aren't we, darling? We are happy, aren't we?" Aunt Honora, the father Leander, and the bisexual Coverly are members of the title family in this author's first novel. At the end of a story by this author, a man realizes his house is abandoned after traveling home by way of all his neighbors' pools. For 10 points, name this American author of *The Wapshot Chronicle*, "The Enormous Radio," and "The Swimmer."

ANSWER: John **Cheever** <Casalaspi>

15. This man employed Bella de Costa Greene to create a massive personal library, where he once locked his colleagues until 5:00 AM to force a deal during a crisis that prompted the Aldrich-Vreeland Act. George Cortelyou was forced to rely on this man to that incident, which was triggered by the Hepburn Act and F. Augustus Heinze's failed bid to corner the copper market. This man died shortly after testifying before the Pujo Committee, and he organized banker intervention to end the Panic of 1907. For 10 points, name this financial magnate who oversaw the creation of G.E. and U.S. Steel, and whose namesake company later merged with Chase Manhattan Bank.

ANSWER: John Pierpont **Morgan** <Ray>

16. For a brief period at this location, an attractive former cheerleader named Susie Phillips would greet visitors as they arrived. Skeptic Brian Dunning has written about employees here were "often friendly" and performed favors for people. A group of people at this location temporarily revolted by refusing to wear stocking caps. While working here, David Eshelman attempted to impersonate actor Strother Martin from the film *Cool Hand Luke*. The leader of this place would compare it to a foreign location in his book *The Lucifer Effect*. Christina Maslach questioned the conditions of this location, where people were apparently abused by men like "John Wayne" and other people playing guards. For 10 points, name this location where Philip Zimbardo conducted a 1971 experiment to study the effects of imprisonment.

ANSWER: The **Stanford prison** [or **Jordan Hall**; accept answers mentioning **Stanford** University and **prison**; accept obvious synonyms for "prison"] <Cheyne>

17. The death of this group is foreshadowed when the room they are dining in appears to be soaked in blood. A fight nearly breaks out when one of its members angrily throws a footstool that knocks a cupbearer to the ground. This group urges an old man to fight the drunken beggar Irus. A youth sailing home from Sparta is informed by Athena that some of their members are waiting to ambush him. Antinous and Eurymachus are the leaders of this group, whose efforts are thwarted by a burial shroud that is unsewn each night. Members of this group lose an archery contest to a man that shoots an arrow through twelve axeheads; afterwards, they are killed by that man and his son, Telemachus. For 10 points, name these men who try to marry Odysseus's wife.

ANSWER: **suitors** of Penelope [or the **Proci**] <Kim>

18. As a young boy, the main character of this novel is fond of a chestnut tree planted by his mother after he was born and enjoys visiting the observatory of an astrology-obsessed priest. In this novel, a woman uses large letters written on the pages of a book to communicate with the protagonist while standing at the window of an aviary. In this novel, a man escapes from his prison in the Farnese tower with the help of three ropes sent by his aunt, the lover of Count Mosca. The protagonist of this novel rides with Marshal Ney's hussars while participating in the Battle of Waterloo. This novel's protagonist pursues a romance with Clelia Conti but eventually retires to the title monastery. For 10 points, name this novel about Fabrizio del Dongo, a work of Stendhal.

ANSWER: *The **Charterhouse of Parma*** [or *La **Chartreuse de Parme***] <Brownstein>

19. The aorta often features a cluster of cells normally found in this structure called the organ of Zuckerkindl. Phenylethanolamine N-methyltransferase catalyzes methylation of a hormone released by this structure derived from dopamine. Simple virilizing and salt-wasting forms of a hyperplasia of this gland result from deficient 21-hydroxylase activity in its zona fasciculata. Pheochromocytomas originate from this structure's chromaffin cells. The outermost portion of this structure produces mineralocorticoids such as aldosterone. Its medulla secretes catecholamines, and ACTH triggers its cortex to produce cortisol. For 10 points, name this gland that produces epinephrine and is found on top of the kidney.

ANSWER: **adrenal** glands <Smart>

20. This product was given to a condemned criminal to see how quickly it would kill him in an experiment ordered by Gustav III of Sweden. Rising prices for this product sparked a namesake 1976 "crisis" in East Germany. This product was the primary export of a place which set quotas for it via the Preanger **(pray-AHN-gair)** System and the Cultivation System. Oligarchs who produced this product dominated the coronelismo system during the tenure of Washington Luis, and that period named for this product and "milk" was ended by the coup of Getulio Vargas. The goatherd Kaldi apparently discovered this product in Ethiopia, its country of origin. For 10 points, name this product harvested on the island of Java.

ANSWER: coffee beans [or coffea] <Brownstein>

21. The wall of this structure is produced from cells lining the perioplic and coronary grooves. The pastern is found between the fetlock and this structure encasing the coffin bone, and a wedge-shaped glandular region between the bars called the frog helps to spread two other components when it is loaded. Excessive drying or injury to the coronet may lead to heel crack in this structure. A stone bruise on the sole of this structure can cause lameness. In Artiodactyla, two smaller types of this structure called dew claws usually appear along with its cloven form. In some odd-toed ungulates it is cared for by farriers. For 10 points, name this thick, keratinous covering on the toes of animals such as horses.

ANSWER: hoof [prompt on feet, claws, and nails; prompt on toe until it is read] <Smart>



NASAT 2015 - Round 18 - Bonuses

1. With the name Pocket, this character is the narrator of a Christopher Moore novel, and the banker Marv Carson is the representation of this character in Jane Smiley's *A Thousand Acres*. For 10 points each:

[10] Name this character who tells his master, whom he often calls "nuncle," that "thou shouldst not have been old till thou hadst been wise."

ANSWER: the **Fool** [or Lear's **Fool**]

[10] The Fool appears in *King Lear*, in which the title character disowns this virtuous daughter and gives his land to Goneril and Regan.

ANSWER: **Cordelia**

[10] When commanded to praise Lear at the love test, Cordelia twice responds with this word, prompting Lear to angrily repeat it and demand she "speak again."

ANSWER: **nothing** <Gehring>

2. This compound is sequentially hydrolyzed by E-NTPDases 2 and 3, and retinal nerves release it and acetylcholine as co-neurotransmitters in response to light. For 10 points each:

[10] Name this compound that binds to P2X receptors to allow influx of sodium and calcium ions. The final breakdown product of this compound is inhibited by caffeine.

ANSWER: **ATP** [or **adenosine triphosphate**]

[10] P2X belongs to a namesake family of receptors responsive to these double-ringed heterocyclic compounds. Caffeine and the nucleobases adenine and guanine are in this group, which is contrasted with pyrimidines.

ANSWER: **purines** [or **purinergic** receptors; or **purinoreceptors**]

[10] The ADP-binding purinoceptor P2Y₁₂ is the target of drugs such as clopidogrel that decrease aggregation of these cells, which contain ADP and ATP in their dense granules and von Willebrand factor in their alpha granules.

ANSWER: **platelets** [prompt on **megakaryocytes**] <Smart>

3. This leader dealt with a revolt of the anti-feudal Comuneros at the battle of Villalar. For 10 points each:
[10] Name this Habsburg monarch of the 16th century who unified his various Iberian possessions into Spain. This rival of Francis I Valois was also Holy Roman Emperor, in which capacity he controlled the Low Countries and Austria.

ANSWER: **Charles V** Habsburg [or Holy Roman Emperor **Charles V**; or **Carlos V**; or **Charles I of Spain**]

[10] Charles V lived in a monastery at Yuste after taking this action in 1556. This action empowered Charles's brother Ferdinand I and his son Philip II.

ANSWER: he **abdicated** his rule [or he **resigned**; prompt on "**retirement**"]

[10] Charles V dealt harshly with this order of migratory shepherds while attempting to manage Spain's economy. It was founded in Castille in the 13th century and had sway well into the 18th.

ANSWER: **Mesta** <Jackson>

4. This organization's creation was opposed in a speech by John Taylor that declared that creating this organization could result in the emancipation of Southern slaves. For 10 points each:

[10] Name this organization, whose second president was Langdon Cheves. This institution's final president was Nicholas Biddle, whose push for an early recharter in 1832 led to its demise.

ANSWER: **Second Bank** of the **United States** [or equivalents, such as **Second U.S. Bank**; prompt on **Bank** of the **United States**; do not accept "First Bank of the United States"]

[10] This Democratic president fought against the renewal of the Second Bank's charter by appointing Roger Taney as Treasury Secretary and withholding federal funds from the bank.

ANSWER: Andrew **Jackson**

[10] This Kentucky-born Postmaster General under Jackson edited the *Washington Globe* and turned it into the Jackson administration's mouthpiece. He also drafted Jackson's veto of the Second Bank's charter.

ANSWER: Amos **Kendall** <O'Rourke>

5. Answer the following about the ideal of "cosmopolitanism" in philosophy, for 10 points each.

[10] This Cynic philosopher from Sinope originated the term "cosmopolitan," meaning "citizen of the world," rather than identify with any city-state. He allegedly wandered around with a lamp.

ANSWER: **Diogenes** of Sinope

[10] This ruler identified just action with acting as a member of the universal "cosmopolis" within 12 books of philosophy written for himself while on campaign in the 2nd century CE.

ANSWER: **Marcus Aurelius** Antoninus Augustus

[10] This later thinker's essay "Idea for a Universal History from a Cosmopolitan Point of View" expressed belief in human progress, despite warning that "Out of the crooked timber of humanity no straight thing was ever made."

ANSWER: Immanuel **Kant** <Jackson>

6. This author attacked the "spiteful critics and slanderers" at the beginning of a poem about a knight's first love, "Guigemar." For 10 points each:

[10] Name this author of "Lanval" who probably wrote at the English court of Henry II.

ANSWER: **Marie de France** [or **Marie of France**]

[10] "Lanval" opens with this character, a "brave and courtly king," giving out gifts to the knights of his Round Table.

ANSWER: King **Arthur**

[10] This character is the first knight to realize that Lanval has been wronged. In a poem by the author of *Patience*, Lady Bertilak repeatedly attempts to seduce this character, but only succeeds in kissing him.

ANSWER: Sir **Gawain** <Sy>

7. Empirical evidence for this substance was provided by Vera Rubin's investigation of galaxy rotation curves. For 10 points each:

[10] Name this substance that does not emit or absorb radiation and makes up around 27 percent of the mass of the universe.

ANSWER: **dark matter** [prompt on partial answers]

[10] Rubin pointed out that, in the absence of dark matter, the orbital velocity of stars should fall off as one over the radius squared; instead, most rotation curves have a velocity that varies with this power of the radius.

ANSWER: **zero** [or it does **not** vary; or **constant** velocity; or **flat** rotation curves; or obvious equivalents]

[10] The ratio of this quantity to luminosity is often used to estimate the concentration of dark matter. For a star, luminosity varies with this quantity raised to approximately the 3.5 power.

ANSWER: stellar **mass** <Silverman>

8. A series of 2013 riots in this country was started by the Free Fare Movement, which criticized the rising cost of public transportation. For 10 points each:

[10] Name this country that employed the Bolsa Família welfare program under its former president, Luiz Inácio Lula da Silva.

ANSWER: **Brazil** [or Federative Republic of **Brazil**; or República Federativa do **Brasil**]

[10] Waves of 2014 protesters in Brazil decried the cost of building facilities for this event. On its final day, police prevented the protesters from traveling to Maracanã Stadium.

ANSWER: 2014 FIFA **World Cup**

[10] In May 2015, the decapitated body of Evany José Metzker, a man of this profession, was found in Minas Gerais. Kenji Goto, another man of this profession, was also beheaded in January 2015.

ANSWER: **journalists** [or obvious equivalents] <Golimlim>

9. Late in his career, this architect designed a number of bank branches now known as his "jewel boxes." For 10 points each:

[10] Name this man who, along with his business partner Dankmar Adler, pioneered the skyscraper with works such as the Wainwright Building in St. Louis.

ANSWER: Louis **Sullivan** [or Louis Henry **Sullivan**]

[10] Louis Sullivan coined this three-word phrase in his article "The Tall Office Building Artistically Considered." It became a motto for modernist architects.

ANSWER: "**form follows function**"

[10] In his book *Autobiography of an Idea*, Sullivan lamented that American architecture had been set back forty years by this event, for which he and Adler designed the deliberately polychrome Transportation Building. The City Beautiful movement flourished after this event.

ANSWER: World's **Columbian Exposition** [or World's Fair: **Columbian Exposition**; or **1893 World's Fair**; or **White City**; or Chicago **Columbian Exposition**; or **EXPO Chicago 1893**; prompt on **World's Fair**; prompt on **Chicago World's Fair**] <White>

10. In many economic growth models, the technology factor has this property that makes it differ from labor and capital. For 10 points each:

[10] Name this property of goods where one person's consumption does not prevent consumption by another. It is not to be confused with non-excludability.

ANSWER: **non-rivalry**

[10] These types of goods are non-rival and non-excludable. They include services like policing that are usually provided by a government.

ANSWER: **public** goods

[10] Public goods can fall victim to the free rider problem because it is difficult to make consumers pay this quantity. This quantity is the resources expended in producing one additional unit of the good. In a competitive market it equals price.

ANSWER: **marginal cost** [do not accept "average cost"] <Bailey>

11. The title figure of this story is variously identified as "amusing," "almost beautiful," and "all drawn out of shape." For 10 points each:

[10] "Name this story that opens a collection whose other stories include "Queer" and "The Philosopher."

ANSWER: "The **Book of the Grotesque**"

[10] "The Book of the Grotesque" opens this collection of stories set in the title Midwestern city by Sherwood Anderson. Many of its stories concern the young man George Willard.

ANSWER: **Winesburg, Ohio**

[10] An oft-excerpted story from *Winesburg, Ohio* discusses this schoolteacher's problems with the "restless activity" of the title body parts, "Hands." This character went by the name Adolph Myers until being accused of molestation.

ANSWER: **Wing** Biddlebaum [or Wing **Biddlebaum**] <Sy>

12. Assuming only classical mechanics, the thermal average of this quantity will be zero according to the Bohr-van Leeuwen theorem. For 10 points each:

[10] Name this quantity whose curl is equal to effective current density. The H field equals the B field over the vacuum permeability minus this other quantity.

ANSWER: magnetization [or **M**]

[10] A process named for this physicist reduces the magnetization of a material to zero. A law named for this physicist sets the divergence of the magnetic field equal to zero.

ANSWER: Carl Friedrich **Gauss**

[10] Gauss's law for magnetism forbids the existence of these particles, which are magnetic analogs to point charges.

ANSWER: magnetic monopoles <Silverman>

13. A character with this last name kills his fiancée Amalia after being forced into a life of brigandage in Bohemia. For 10 points each:

[10] Name this surname shared by Karl and Franz, the main characters of *The Robbers*.

ANSWER: **Moor**

[10] "This German author of *The Robbers* and *William Tell* addressed a "daughter of Elysium" in "Ode to Joy."

ANSWER: Friedrich **Schiller** [or Johann Christoph Friedrich von **Schiller**]

[10] In *William Tell*, the title hero is arrested after failing to perform this action in obeisance to the governor.

ANSWER: salute a hat [or obvious equivalents; prompt on salute] <Sy>

14. These two ships made three voyages to Antarctica before being used in a lethal expedition in the Arctic. For 10 points each:

[10] Name this pair of ships that disappeared after being abandoned during the 1848 Franklin Expedition. These ships now name two volcanoes on Ross Island.

ANSWER: HMS **Terror** and HMS **Erebus** [accept in either order]

[10] A lieutenant on the HMS *Terror* lends his name to this largest Antarctic settlement on the tip of Ross Island. This setting of Werner Herzog's *Encounters at the End of the World* is also home to the only ATM in Antarctica.

ANSWER: **McMurdo** Station

[10] Ross Island is also home to a military base named after this explorer, who died during the Terra Nova expedition. He also names a base at the South Pole with the man that beat him to arriving there, Roald Amundsen.

ANSWER: Robert Falcon **Scott** <Smart>

15. Answer the following about the Euler line, for 10 points each.

[10] This point denoted N is on the Euler line. It is equidistant from the midpoints of each of the triangle's sides, the foot of each altitude, and the point midway between the orthocenter and each vertex of the triangle.

ANSWER: **nine-point center** [or the **center of the nine-point circle**]

[10] The nine-point center is the midpoint of the segment connecting the orthocenter and this other point, the center of the circle going through all three of the triangle's vertices.

ANSWER: **circumcenter**

[10] The circumcenter is located at the intersection of the three of these lines for the sides of the triangle. For a given line segment, this line goes through the midpoint of the segment at a right angle.

ANSWER: **perpendicular bisectors** <Schindler>

16. In some narratives, one these gods slays the other at twilight using sea foam as a weapon, after swearing never to use anything dry or wet as a weapon, at day or at night. For 10 points each:

[10] Name these two divine beings. One of them inebriates himself with Soma and slays the other, who is a giant snake holding captive all the waters of the world.

ANSWER: **Indra** and **Vritra**

[10] Other snakes in Hinduism are these children of Kadru who become the mortal enemy of the eagle Garuda after forcing him to steal amrita from the gods.

ANSWER: **nagas**

[10] A snake is used as a belt to hold together the burst stomach of this elephant-headed god.

ANSWER: **Ganesh**a [or **Ganapati**; or **Vinayaka**] <Kim>

17. This tone poem features a pair of pianolas having a "ragtime war" and repeatedly quotes the popular song "Hello ma Baby." For 10 points each:

[10] Name this polytonal piece depicting a summer evening, which its composer described as a "contemplation of nothing serious."

ANSWER: **Central Park in the Dark**

[10] *Central Park In The Dark* was written by this American composer and insurance executive, who paired it with his *The Unanswered Question*.

ANSWER: Charles **Ives**

[10] This other Charles Ives piece quotes Beethoven's *Hammerklavier* Sonata, and features an optional part for flute, representing Henry Thoreau, in its final movement.

ANSWER: **Concord Sonata** [or **Piano Sonata No. 2**, Concord, Mass., 1840-1860] <White>

18. This man fought at the Siege of Bender and claimed that his godfather was Peter the Great. For 10 points each:

[10] Name this man who was shown off in a metal cage after being betrayed by the Cossacks he led against Catherine the Great.

ANSWER: Yemelyan **Pugachev** [or Yemelyan Ivanovich **Pugachev**]

[10] Pugachev's Rebellion was motivated in part by Catherine the Great's stance against these Russian peasants. They were liberated by Alexander II in 1861.

ANSWER: **serfs** [or **krepostnoi**]

[10] This group, one of the many that participated in Pugachev's Rebellion, split from the Russian Orthodox Church in 1666 in response to the reforms of Patriarch Nikon.

ANSWER: **Old Believers** [or **starovery**] <Golimlim>

19. This painting's portrait of Nicolas Poussin was directly copied from one of Poussin's self-portraits. For 10 points each:

[10] Name this 1827 painting in which an ensemble cast of classical luminaries observes Nike placing a laurel wreath atop the head of the title poet.

ANSWER: *The **Apotheosis of Homer***

[10] This French Neoclassical painter of *The Apotheosis of Homer* painted an anatomically-incorrect Turkish concubine in *La Grande Odalisque*.

ANSWER: Jean Auguste Dominique **Ingres (awn-GER)**

[10] In *The Apotheosis of Homer*, this person is sandwiched between Virgil and Sappho. He wears white robes and converses with mathematicians and scientists in *The School of Athens*.

ANSWER: **Raphael** [or Raffaello **Sanzio** da Urbino] <Saric>

20. During this war, it was fashionable not to play the music of Wagner in orchestras. For 10 points each:

[10] Name this conflict during which Americans temporarily referred to sauerkraut as "liberty cabbage" and the town of Berlin, Michigan, changed its name to Marne to honor a battle and avoid German associations.

ANSWER: **World War I**

[10] During the war, this politician denounced "hyphenated Americanism," saying that dual loyalties were impossible. During the early 1910s, he went on an expedition in South America to explore the "River of Doubt."

ANSWER: Theodore "Teddy" **Roosevelt**

[10] In 1919, this state passed a law restricting foreign language education, which was struck down in a 1923 Supreme Court case. The act resulted in the conviction of German language teacher Robert Meyer.

ANSWER: **Nebraska** <Cheyne>

21. Friedrich Grützmacher made large edits to Luigi Boccherini's B-flat major ninth piece in this genre. For 10 points each:

[10] Name this genre. Pyotr Ilyich Tchaikovsky's *Rococo Variations* is sometimes considered to be in it.

ANSWER: **cello concertos** [or **cello concerti**; prompt on **concertos**; prompt on **concerti**]

[10] Boccherini is best known for one of these French dances in 3/4 time that he used as the A major third movement of his *String Quintet in E major*.

ANSWER: **minuets** [or **menuets**; or **minuetto**s]

[10] A Spanish music-influenced "Fandango" ends a Boccherini chamber piece featuring this instrument. Joaquin de Rodrigo's *Concierto de Rodriguez* is a concerto for this instrument.

ANSWER: **guitar**s [or **chitarras**; or **guitarras**] <Kim>