



NSC 2018 - Round 11 - Tossups

1. It's not a general, but this was the highest post held by the author of the military textbook *Taktika*, who was known as "the Wise." The Chalke Gate was the main entrance to the Great Palace where holders of this post lived. The final holder of this post legendarily was turned into marble after he died fighting alongside Giovanni Giustiniani of Genoa. The daughter of a holder of this post wrote the (*) *Alexiad* during the Crusades. The first of the Leonid Dynasty to hold this post was known as "the Thracian." The last man to hold this title was killed in 1453 while defending his capital city from a successful attack launched by the forces of Mehmed II. For 10 points, name this title held by an official who ruled from Constantinople.

ANSWER: Byzantine emperor [or Eastern Roman Emperor; prompt on emperor; prompt on Roman Emperor; prompt on partial answers like Byzantine rulers]

<Bentley, History - European>

2. This woman complains that her "proportioned, spiritless poems" are published "away in brutish London, for a hollow crown" in a 52-stanza sequence that tells her "Simon will listen while you read a song." This author's major work contains a section discussing the "four monarchies," and a poem that begins by noting "all may judge" the "errors" of the title "ill-formed (*) offspring of my feeble brain." This poet, the subject of an "Homage" by John Berryman, wrote "If ever two were one, then surely we" in a poem addressed to her "dear and loving husband." For 10 points, name this 17th-century poet who wrote "Verses upon the Burning of our House" and the book *The Tenth Muse Lately Sprung Up in America*.

ANSWER: Anne Bradstreet

<Jose, Literature - American>

3. Thomas Cormen wrote a book in which these concepts are "Unlocked" for the general public, and Cormen is one of the four authors of the CLRS textbook, which is an "Introduction to" these things. Edmund Landau suggested that the lower-order terms describing the complexity of these things should be neglected when analyzing their (*) asymptotic behavior. Providing a tight-bound on the resource usage of these things in the average case is often done using the symbol "theta." These procedures have a finite number of steps, and big-O notation is often used to express the amount of time and space these procedures use. For 10 points, name these step-by-step methods of solving problems, often studied in computer science.

ANSWER: algorithms [accept Algorithms Unlocked or Introduction to Algorithms]

<Jose, Science - Computer Science>

4. This thinker said philosophy tries "to show the fly the way out of the fly-bottle" as part of his theory of philosophy as therapy. This man was inspired by the method used in Paris traffic courts to develop his "picture theory." A work by this man opens with a quotation on the origins of language from Augustine. This non-classical thinker referred to an early book as a ladder to be thrown away after it is climbed, and opened that work with (*) seven basic propositions. He later suggested that "the object drops out of consideration as irrelevant" when arguing against the idea of a private language using the "beetle in a box" thought experiment. For ten points, name this author of the *Philosophical Investigations* and *Tractatus Logico-Philosophicus*.

ANSWER: Ludwig (Josef Johann) Wittgenstein

<Boyd, RMP - Philosophy>

5. Speakers of this language were conscripted by Milanese architect Giovanni Cairati to built Fort Jesus. A region named for this language was the site of a port city, identified with the Biblical Ophir (oh-FEER), called Sofala, which became a vassal of the Kilwa Sultanate. This language was predominantly spoken in the city Malindi, which sent a large animal back to the Ming court after Zheng He's (jung huh's) treasure ships visited it. A word from this language, (*) *ujamaa*, was adopted to describe the form of socialism put forth in the Arusha Declaration by Julius Nyerere. The Islamic city-states that developed on this language's namesake coast included the port of Mombasa. For 10 points, name this official language of Tanzania, a Bantu language spoken widely in East Africa.

ANSWER: Swahili [or Kiswahili]

<Brownstein, History - World>

6. One character in this novel dreams of himself as a "solitary traveler" who sees a woman made of "sky and branches" in Regents Park, where another character hears birds singing in Greek that there is no death. The narrator of this novel describes Dr. William Bradshaw as worshipping "Proportion" and its repressive sister "Conversion." A woman in this novel reflects on her decision to marry the politician Richard instead of (*) Peter Walsh, and treasures the memory of kissing Sally Seton at Bourton. The protagonist of this novel admires Septimus Smith for committing suicide during the party for which she buys flowers at its opening. For 10 points, name this stream-of-consciousness novel about the housewife Clarissa, by Virginia Woolf.

ANSWER: Mrs. Dalloway

<Bollinger, Literature - British>

7. Arias by this composer are supposedly the basis for Mikhail Glinka's *Variations* for harp and Fernando Sor's Opus 9 *Introduction and Variations*. A biography of this composer is the magnum opus of Alfred Einstein, who revised the major thematic catalog of this man's works. This composer's output was called "the highest, the most perfect culmination" by Tchaikovsky, whose *Orchestral Suite No. 4* and *Serenade for Strings* are tributes to him. While (*) Beethoven sketched his Fifth Symphony, he copied down a G minor Mannheim rocket from the second of this composer's two minor key symphonies. A piano sonata by this composer ends in a movement whose name inspired Dave Brubeck's "Blue Rondo à la Turk." For 10 points, name this composer of *The Magic Flute*.

ANSWER: Wolfgang Amadeus Mozart [accept Mozart: *His Character, His Work*; accept Mozartiana]

(Einstein revised the Köchel catalog.)

<Alston, Arts - Music>

8. One building in this city is shaped like a bass clef when viewed from above. Kelsey Montague's mural "Angel Wings" in this city was featured in a *Buzzfeed* article by Anne Helen Petersen about how this city became "One Big Bachelorette Party." The Station Inn is found in this city's neighborhood The Gulch, also home to the Mercy Lounge music venue in a former cannery. This city contains Belmont University, and its Centennial Park is home to a gilt statue of (*) Athena Parthenos within a full-scale replica of the Parthenon. RCA's Studio B is among the recording studios and honky-tonks found on this city's Music Row. The Grand Ole Opry is recorded in this city, which also contains the Country Music Hall of Fame. For 10 points, name this capital of Tennessee.

ANSWER: **Nashville**, Tennessee

<Kothari, Geography - United States>

9. Psalm 133 verse 2 compares this substance on a man's beard to "how good and how pleasant it is for brothers to dwell together in unity." Elisha saved a widow from creditors by miraculously multiplying some of this substance for her to sell. In Exodus, God gives Moses the proportions of myrrh (murr), cinnamon, calamus, and cassia (CASH-uh) to be used in creating a type of this substance that was henceforth used to (*) mark the descendants of Aaron. The Talmud describes how the troops of Antiochus defiled all but one cruce of this substance, which was then used for seven nights by the Maccabees in a miracle celebrated on Hanukkah. For 10 points, name this substance once used to anoint Jewish priests and kings, which can be obtained by pressing olives.

ANSWER: **oil** [or *shemen*; accept olive **oil**]

<Brownstein, RMP - Bible/Christianity>

10. ASS (A-S-S) syndrome is caused by an autoimmune reaction to enzymes that modify a hydroxyl group on these molecules. In bacteria, deacylated examples of these molecules can trigger the stringent response by signaling amino acid starvation. Tetracyclines (tetra-SY-kleenz) prevent the binding of these molecules, which are "charged" by aaRS enzymes. A molecule of pseudouridine is found on the T-psi-C arm of these molecules. The (*) 5-prime ends of these molecules can participate in wobble pairing. Elongation factors assist in the binding of these molecules to the A site. These cloverleaf-shaped molecules are ligated with amino acids before they are transported to the ribosome. For 10 points, name these molecules whose anticodons bind to mRNAs during translation.

ANSWER: **tRNAs** [accept **transfer RNAs**; accept aminoacyl-**tRNAs**; accept "ribonucleic acid" in place of "RNA"; prompt on **RNA**]

<Wang, Science - Biology>

11. This monarch's policies led to a group's 100-year period of "Désert" (day-ZAIR), or "wilderness." This monarch reversed the "grace" his father had granted via the Peace of Alais (ah-LESS). Troops under this monarch had trouble defeating psalm-singing rebels known as the Camisards, who waged a guerrilla campaign from the Cévennes (say-VEN). This monarch ordered troops to billet with non-conformist families in his kingdom, a practice called "dragonnade." He signed the Treaty of Ryswick (RICE-wick) with the Protestant (*) William III of Orange to end the War of the League of Augsburg. As many as 250,000 people were compelled to "Leave Babylon" after this monarch issued the Edict of Fontainebleau (fon-ten-BLOW). For 10 points, the Edict of Nantes (nahnt) was revoked by what French "Sun King"?

ANSWER: **Louis XIV** [or **Louis the Great**; or **Louis le Grand**; accept **Louis the Sun King** or **Louis Roi Soleil** until "Sun" is read]

<Bentley, History - European>

12. While in a detox clinic, this artist illustrated a fable about one of the first humans being torn to pieces in a drawing titled *Alpha and Omega*. He depicted himself as a toothless, red-faced old man in *Self-Portrait with Bottles*. The death of his younger sister inspired the dread present in his portrait of a nude young girl titled *Puberty*. The common name for a painting he exhibited as *Love and Pain* came from a reviewer who read it as a "broken man with a (*) vampire biting his neck." His best-known painting came from a vision where "air turned to blood" while walking with friends at sunset; in that painting, two darkly-dressed men on a bridge under a swirling red sky walk away from the man who holds his hands to his face. For 10 points, name this Norwegian artist of *The Scream*.

ANSWER: Edvard Munch (moonk)

<Bentley, Arts - Painting>

13. Muon lifetime measurements have obtained precise measurements of this scientist's namesake coupling constant, which is proportional to the square of the weak coupling constant and arose when this scientist performed the first mathematically rigorous analysis of beta decay. This scientist measured the displacement of a piece of paper to calculate the blast strength of the Trinity test. This scientist's (*) "paradox" observes that despite the huge number of Sun-like stars in the universe, extraterrestrial life has never been found. Rounding to powers of 10 is commonly done in an "estimation" technique named for this director of the Chicago Pile-1. For 10 points, name this Italian-American physicist who performed the first nuclear chain reaction.

ANSWER: Enrico Fermi [accept Fermi constant or Fermi interaction or Fermi paradox or Fermi estimation]

<Busse, Science - Physics>

14. Pierre-Eugene Secretan donated 60,000 tons of material for this project, which was almost painted over by George C. Burnell in 1906. Grover Cleveland presided over the first-ever ticker tape parade celebrating this project's completion. Rubber manufacturer Richard Butler made thousands of replicas of it to raise money for a pedestal. A 1909 flight around this thing by Wilbur Wright was the world's first (*) over-water flight. It was built on an exclave called Bedloe's Island. The arm from this then-incomplete work was displayed at the 1876 Centennial Exposition. Frederic Auguste Bartholdi designed this monument, and a poem by Emma Lazarus was later added to it. For 10 points, name this torch-bearing monument that welcomes ships to New York.

ANSWER: Statue of Liberty [or Liberty Enlightening the World; or *La Liberté éclairant le monde*]

<Bentley, Mixed/Other/General Knowledge>

15. This author's final novel is largely about a character who is saved from drowning by Abraham Lissov, then befriends the poodle Ponto and falls in love with Miesmies (meez-meez); that novel features inserted fragments of a biography of the composer Johannes Kreisler. A character who only says "Ah, ah!" is revealed to *not* be the daughter of Spallanzani, but instead an automaton created by the alchemist (*) Coppelius, in a story by this man that ends with Nathanael throwing himself to his death after shouting "pretty eyes, pretty eyes!" Marie Stahlbaum is told a story about Princess Pirlipat and the inventor Drosselmeier by the title toy in a story by, for 10 points, what German Romantic author of *Kater Murr*, "The Sandman," and "The Nutcracker and the Mouse King"?

ANSWER: E. T. A. Hoffmann [or Ernst Theodor Amadeus Hoffmann]

<Carson, Literature - European>

16. A pioneering 1786 law in this state disestablished its official church. A scandalous passage in a document named for this state declared, "It does me no injury for my neighbor to say there are twenty gods, or no god." A jury in this modern-day state awarded only one penny in damages to Reverend James Maury, who was upset his wages were no longer paid in (*) tobacco in the Parson's Cause. Some aforementioned "Notes" on this state were prepared in Paris in 1781. This state's second governor compiled Jesus's non-miraculous teachings into a namesake Bible and perhaps let his deist attitudes show through in a phrase about men being "endowed by their Creator with certain unalienable Rights." For 10 points, name this state once governed by Thomas Jefferson.

ANSWER: **Virginia** [or Commonwealth of **Virginia**]

<Bentley, History - American>

17. Sources differ on whether this man's wife or a slave named Pieris (pee-EH-ris) was the mother of his son Nicostratus. During his visit to the underworld, Aeneas learns of how this man killed a sleeping Deiphobus. He is wounded by an arrow shot by Pandarus shortly after a duel that was made inconclusive when Aphrodite caused his opponent's helmet strap to break. This father of Hermione helped his older brother dethrone (*) Thyestes, then later won the drawing of straws that took place after he and his fellow suitors took the Oath of Tyndareus. He captured Proteus in order to return home from the Trojan War, where he recovered Patroclus's body and won a duel against Paris. For 10 points, name this king of Sparta, the brother of Agamemnon and the first husband of Helen of Troy.

ANSWER: **Menelaus**

<Carson, RMP - Greco-Roman Myth>

18. A fictional "miracle" paint advertised as having been developed *after* this conflict is Sateen Dura Luxe, which a veteran of this war uses to create abstract expressionist paintings. A novel about this war opens with its author reading Theodore Roethke's "The Waking" on a plane. A Rabo Karabekian painting inspired by this conflict is kept locked-up in a potato-barn in the novel *Bluebeard*. In a novel partly set during this conflict, the theft of a teapot prompts the (*) execution of the soldier Edgar Derby, and Tralfamadorian aliens abduct an optometrist who becomes "unstuck in time," Billy Pilgrim. For 10 points, name this war depicted in *Slaughterhouse-Five*, whose author Kurt Vonnegut during the firebombing of Dresden.

ANSWER: **World War II** [or **WW2**]

<Jose, Literature - American>

19. This man's use of folk traditions from his home country was the subject of a 1996 book by Richard Taruskin (ta-RUSS-kin). This composer may have borrowed from his teacher a system of pitch organization that led Arthur Berger (burger) to coin the term "octatonic"; he used that system for a ballet that includes the tableaux "The Bridegroom's House" and "The Wedding Feast" and is titled *Les noces* (lay NUSS). He combined clashing C major and F-sharp major (*) triads in a chord from one ballet. He used a Lithuanian folk melody as the basis for the high-pitched opening bassoon solo from "The Adoration of the Earth" in another ballet. He wrote *Petrushka* for Sergei Diaghilev's (dee-AH-gill-ev's) *Ballets Russes* (ballet ROOSE). For 10 points, name this Russian composer of *The Rite of Spring*.

ANSWER: Igor **Stravinsky** (The teacher is Nikolai Rimsky-Korsakov.)

<Kothari, Arts - Ballet/Dance>

20. When an alkene serves as one of these species, the double bond length tends to increase according to the Dewar–Chatt–Duncanson model, which covers a specific case of pi-backbonding. These species may be characterized by their cone angle and bite angle. Phosphines (FOSS-feens) are commonly used as these species, whose presence causes d-orbital (*) splitting predicted by crystal field theory. These species can be characterized as type L, X, or Z depending on if they donate two, one, or zero electrons respectively. When these species bind at multiple sites, their hapticity or denticity is greater than one, and polydentate ones are called chelating (KEE-late-ing) agents. For 10 points, name these species which coordinate to metal centers to form complexes.

ANSWER: **ligands** (LIG-unds) [prompt on chelates or chelating agents until read]

<Wang, Science - Chemistry>

21. This enthusiast of Shakespeare's play *Titus Andronicus* bought the film rights to Julie Taymor's play *Titus*. *New Yorker* reporter Connie Bruck cast doubt on this man's claims that he got rich from *Seinfeld* syndication fees. He secured the audiobook rights of *Going Rogue* to provide narration for his documentary *The Undeclared* about (*) Sarah Palin. He brought Julia Hahn, a co-worker at a website he controlled, with him to the White House. He resigned one post after the Unite the Right rally. In *Fire and Fury*, Michael Wolff quotes this Roy Moore backer as calling a Trump Tower meeting with Russian operatives "treasonous"; shortly thereafter, he left Breitbart News. For 10 points, name this former chief strategist for Donald Trump.

ANSWER: Steve **Bannon** [or Stephen Kevin **Bannon**]

<Bentley, Current Events - United States>



NSC 2018 - Round 11 - Bonuses

1. Cole Porter was the first owner of a painting by this artist included in the recent "America After the Fall" exhibit at the Royal Academy in London. For 10 points each:

[10] Identify this artist who showed a black sedan about to collide with a truck in *Death on the Ridge Road*. This Regionalist also painted the midnight ride of Paul Revere.

ANSWER: Grant **Wood** [or Grant DeVolson **Wood**]

[10] Grant Wood is best known for this painting, which left the US for the first time for the Royal Academy show. The old man in this painting holds a pitchfork.

ANSWER: ***American Gothic***

[10] In this other Grant Wood painting, the title man pulls back a curtain whose fringes are the same shape and color as the fruit in the felled tree in the painting's foreground.

ANSWER: ***Parson Weems' Fable***

<Bentley, Arts - Painting>

2. One step in the derivation of this equation assumes that the product of the differential change in mass times the differential change in velocity is vanishingly small compared to the other terms. For 10 points each:

[10] Name this equation whose right-hand side term is proportional to the natural log of the mass ratio.

ANSWER: ideal **rocket** equation [accept **Tsiolkovsky** rocket equation]

[10] The ideal rocket equation shows that while the efficiency of rocket propulsion is logarithmically proportional to the amount of fuel, it's linearly proportional to this quantity.

ANSWER: **exhaust velocity** [accept answers indicating the **velocity** of the **fuel** or **velocity** of the **propellant**; accept **specific impulse**; prompt on **velocity**; do not accept or prompt on "impulse"]

[10] The ideal rocket equation is derived from the conservation of this quantity. It equals mass times velocity.

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

<Busse, Science - Physics>

3. Jorge Luis Borges (**BOR-hays**) called William Henry Hudson's *The Purple Land* the greatest literary work about these people. For 10 points each:

[10] Name this kind of person exemplified by both the protagonist of Ricardo Güiraldes's *Don Segundo Sombra* and the hero of an epic poem by José Hernández. Many ballads called *payadas* were about them.

ANSWER: **gauchos** [prompt on **horseman** or **cowboy**]

[10] Hernández's *Martín Fierro* establishes a link between gaucho culture and the development of this South American country, which was also home to Borges and the Ocampo sisters.

ANSWER: **Argentina** [or the **Argentine** Republic]

[10] This other Argentine author included 99 "expendable" chapters in his novel *Hopscotch*. He also wrote the stories "Blow-Up" and "Axolotl."

ANSWER: Julio **Cortázar** (**kor-TAH-sar**) [or Julio Florencio **Cortázar**]

<Kothari, Literature - World>

4. These people were required to carry an internal passport with them, and the collective taxes laid on them discouraged them from leaving their homes. For 10 points each:

[10] Identify these people who suffered under the Obshchina and its communal ownership system until their lives were made marginally better by the Stolypin reforms.

ANSWER: Russian **serfs** [prompt on Russians or Russian workers]

[10] The serfs were freed by this Russian emperor who was assassinated in 1881.

ANSWER: **Alexander II** [or **Aleksandr II** Nikolaevich; prompt on Alexander]

[10] An earlier attempt to assassinate Alexander II involved blowing up one of these things. Alexander III held up the ceiling of one of these things so his family could escape during an incident in Borki.

ANSWER: **trains** [or **train cars**; or **dining cars**; or **railroad cars**]

<Bentley, History - European>

5. The 2012 death of a dentist named Savita Halappanavar in this country reignited debate about its Eighth Amendment, which bans abortions. For 10 points each:

[10] Identify this country, where a 2018 referendum overturned the abortion ban. Its Prime Minister is Leo Varadkar.

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

[10] The Pro-Choice sign "get your rosaries off my ovaries" is a reference to this institution's strong anti-abortion position. This is the dominant faith in Ireland.

ANSWER: **Catholic** church [or Roman **Catholicism**; prompt on Christianity]

[10] In 2016, women in this European country dressed in black to protest an attempt to make all abortions illegal. The European Commission has started the Article 7 process to penalize this country's Law and Justice party.

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

<Bentley, Current Events - Foreign>

6. The oxygen evolving complex of photosystem II contains one atom of calcium and four atoms of this metal. For 10 points each:

[10] Identify this metal that adopts a plus seven oxidation state in an ion with four oxygen atoms.

ANSWER: **manganese** [or **Mn**]

[10] Manganese is a member of this class of metals found in the d-block on the periodic table, between the alkaline earth metals and the metalloids.

ANSWER: **transition** metals

[10] Manganese is at the center of the anti-knock agent MMT, which has a cyclopentadienyl (cyclo-penta-die-ee-nil) ring coordinated to manganese, making it a classic example of the "half" one of this class of compounds. Metallocenes are a subset of these compounds.

ANSWER: half-**sandwich** compound [prompt on piano stool compound]

<Prieto, Science - Chemistry>

7. During a Walpurgis (**vall-PURR-giss**) Night celebration, this character borrows a pencil for a pig-sketching contest from his love interest, to whom he confesses his affection in untranslated French. For 10 points each:
[10] Name this protagonist of a 1924 novel, who learns from the liberal Settembrini and the Marxist Naphta during his seven-year stay at the Berghof (**BAIRG-hoff**) sanatorium.

ANSWER: **Hans Castorp** [accept either underlined portion]

[10] Hans Castorp is the protagonist of this German author's novel *The Magic Mountain*. Gustav von Aschenbach experiences lust for the Polish boy Tadzio (**TAH-joe**) in this author's *Death in Venice*.

ANSWER: Thomas **Mann** [or Paul Thomas **Mann**]

[10] Castorp falls in love with this resident of the sanatorium for the way she slams doors. After sleeping with Castorp, she gives him one of her chest X-rays as a memento.

ANSWER: **Clavdia Chauchat** [accept either underlined name]

<Bollinger, Literature - European>

8. These American-made ships were designed to sail as fast as possible to beat out competitors traveling to China. For 10 points each:

[10] Identify this type of ship whose name comes from the way they reduced the time of a voyage. One of these ships, the *Sovereign of the Seas*, achieved a speed of 22 knots.

ANSWER: **Clippers** [or **Clipper** ships; or extreme **clipper** ships]

[10] A Clipper called the *Flying Cloud* made back its money in just one return voyage from this modern-day state during a gold rush begun after a discovery at Sutter's Mill.

ANSWER: **California**

[10] Another man who profited from the gold rush was Claus Spreckels, who sold this good to gold miners. A trust for this good was not broken up because of the *E.C. Knight* verdict.

ANSWER: **sugar** [or refined **sugar**]

<Bentley, History - American>

9. This complex contains Paul Manship's gilded statue of *Prometheus* and a number of sculptures by Lee Lawrie, including an iconic bronze *Atlas*. For 10 points each:

[10] Name this complex in Manhattan whose principal architect was Raymond Hood. It includes 14 buildings with limestone facades, including Radio City Music Hall, as well as five newer International-style buildings.

ANSWER: **Rockefeller Center**

[10] The 14 original buildings of Rockefeller Center are in this modernist style popular in the 1920s and 1930s, exemplified by the Chrysler Building. Streamline Moderne was an offshoot of this style.

ANSWER: **Art Deco**

[10] This founder of the Office for Metropolitan Architecture waxed poetic about Rockefeller Center in a long section of his book *Delirious New York*. He also wrote *S, M, L, XL*.

ANSWER: Rem **Koolhaas** (**KOHL-hoss**) [or Remment Lucas **Koolhaas**]

<Kothari, Arts - Architecture>

10. This god created giants, but was disappointed in their lack of civilization, so he turned them back into stones and drowned them in a 60-day flood before creating humans. For 10 points each:

[10] Name this creator god who later disappeared after walking west across the Pacific Ocean with his sons Imahmana and Tocapo.

ANSWER: **Viracocha** [or **Wiracocha**; or **Wiraqucha**; or **Kon-Tiki**]

[10] Viracocha is ordinarily depicted as the father of this sun god who was worshiped at Coricancha and at the Island of the Sun in Lake Titicaca. He was the brother of Pachamama and Mama Quilla (**KEE-yah**).

ANSWER: **Inti**

[10] These Mesoamerican people worshipped a pantheon including Viracocha and Inti. The first ruler of their empire, Manco Capac, claimed to be the son of Inti.

ANSWER: **Inca** people [or **Incan**s; or **Incan** Empire; or **Tawantinsuyu**]

<Grames, RMP - Other Myth>

11. This mathematician co-names an asymptotic formula with G. H. Hardy that finds the number of partitions for a positive integer. For 10 points each:

[10] Name this mathematician who, despite little formal training, discovered numerous identities and studied tau and mock theta functions.

ANSWER: Srinivasa **Ramanujan** [accept Hardy–**Ramanujan** formula]

[10] Partitioning a mathematical set S into distinct classes forms this kind of binary relation between the classes and S . These relations obey the properties of reflexivity, symmetry, and transitivity.

ANSWER: **equivalence** relation

[10] Dedekind cuts construct the real numbers by partitioning this other infinite set, often denoted \mathbb{Q} . Numbers in this set can be represented as a fraction of two integers.

ANSWER: **rationals** [prompt on quotients]

<Damisch, Science - Math>

12. Near the end of this book, the narrator is crushed by two "unrelenting forces": her "newly awakening sexual appetite," and the possibility she "might not be a normal female." For 10 points each:

[10] Name this autobiographical work mostly set in Stamps, Arkansas, which ends with the 17-year-old narrator giving birth to her son. It takes its title from a Paul Laurence Dunbar poem.

ANSWER: ***I Know Why the Caged Bird Sings***

[10] *I Know Why the Caged Bird Sings* is the first of a set of seven autobiographical works by this author, who read her poem "On the Pulse of Morning" at Bill Clinton's inauguration.

ANSWER: Maya **Angelou**

[10] In the second half of *I Know Why the Caged Bird Sings*, Maya and her brother move from Stamps to this city, and live with their mother. Rebecca Solnit made a historical and cultural atlas of this city in her book *Infinite City*.

ANSWER: **San Francisco**

<Jose, Literature - American>

13. The demand for this quantity may be motivated by "precautionary" or "speculative" concerns. For 10 points each:

[10] Name this quantity whose supply can be modified via expansionary or contractionary policy set by a central bank.

ANSWER: **money** [accept **money** supply or **money** demand; prompt on monetary base or monetary policy]

[10] In this model developed by John Hicks and Alvin Hansen, the demand for money is incorporated into the curve representing the loanable funds market. The other of this model's two namesake curves represents the goods market.

ANSWER: **IS-LM** model [or **investment-savings, liquidity-money** model]

[10] Besides "precautionary" and "speculative" demand, a third type of money demand is named for these things and motivated by needs such as payment. Ronald Coase (koce) argued that minimizing costs associated with these things motivated the creation of firms.

ANSWER: **transactions** [accept **transactions** demand or **transaction** costs]

<Alston, Social Science - Economics>

14. A 1571 Act of Parliament sought to help manufacturers of this material by requiring that all men over the age of six wear caps made from it on Sundays or face a fine. For 10 points each:

[10] Identify this good, one of the most important English exports in the late Middle Ages. The English raised many sheep to produce this good.

ANSWER: **wool**

[10] English consumers went wild for these multi-colored cotton textiles imported from India beginning in the 17th century, sparking a 1700 Act that banned their sale.

ANSWER: **calico**

[10] This region of India was particularly hard hit by the Calico Acts. Lord Curzon partitioned this place in 1905, and it names a Great Famine of 1770.

ANSWER: **Bengal** [do not accept or prompt on "Bangladesh"]

<Bentley, History - European>

15. This philosopher is often dubiously claimed to be either a teacher or colleague of Parmenides. For 10 points each:

[10] Name this native of Colophon who argued against polytheism by observing that depictions of deities tended to match their followers, providing examples such as the pale gods of the Thracians or the black deities of the Ethiopians.

ANSWER: **Xenophanes** of Colophon

[10] The doubtful thoughts of Xenophanes fit under the umbrella of this general philosophical position which questions the certainty of knowledge. A school with this position was founded by Pyrrho.

ANSWER: **skepticism** [accept word forms like **skeptic**]

[10] The philosopher al-Ghazali's skepticism led him to write *The Incoherence of the Philosophers*, a book that was attacked by this philosopher in *The Incoherence of the Incoherence*. Much like Avicenna, this philosopher interacted heavily with Aristotelian thought.

ANSWER: **Averroes** [accept Abu l-Walid Muḥammad Ibn Aḥmad **Ibn Rushd**]

<Wang, RMP - Philosophy>

16. Julio De Caro invented many *yeites* (**SHAY-tays**) for this family of instruments in the Golden Age of Tango, such as *látigo* (**LAH-tee-go**), a "doit" (**DOYT**) or indefinite upward slide, and *tambor*, a muted rhythmic drumming. For 10 points each:

[10] Name this family of instruments that can imitate a cicada in the extended technique *chicharra* by quickly scraping back and forth below the bridge with a well-rosined (**ROZZ-ind**) bow.

ANSWER: **string** instruments [or **stringed** instruments; or **chordophones**; accept specific string instruments like **violins** or **cellos**] (*Látigo* and *tambor* mean "whip" and "drum.")

[10] Nadia Boulanger (**boo-lawn-ZHAY**) encouraged this composer to fuse his "serious" classical training with Argentine tango to create the Nuevo Tango style. He used *chicharra* in *The Four Seasons of Buenos Aires*.

ANSWER: Astor **Piazzolla** (**pee-ah-SOH-lah**)

[10] Piazzolla unusually played the *bandoneón* (**bon-doh-nay-OWN**) standing up, propping it on a raised knee. The *bandoneón* is a long portable concertina similar to this instrument with perpendicular keys and a buttonboard for chords.

ANSWER: **accordion** [accept piano **accordion** or button **accordion**; prompt on **bellows** or **squeezebox**]

<Lifshitz, Arts - Music>

17. This poem claims that the title entity will "flame out, like shining from shook foil" and says it "gathers to a greatness, like the ooze of oil crushed." For 10 points each:

[10] Name this poem that marvels that "Generations have trod, have trod, have trod," but "nature is never spent."

ANSWER: "**God's Grandeur**"

[10] "God's Grandeur" is a sonnet by this 19th-century Jesuit priest, who used his technique of "sprung rhythm" in poems such as "Pied Beauty."

ANSWER: Gerard Manley **Hopkins**

[10] In this Hopkins sonnet, the speaker announces he has "caught this morning morning's minion, kingdom of daylight's dauphin (**DOFF-in**), dapple-dawn-drawn Falcon."

ANSWER: "The **Windhover**"

<Bollinger, Literature - British>

18. David Phillips proposed a mechanism for how this enzyme catalyzes the hydrolysis of linkages between NAG and NAM in peptidoglycan. For 10 points each:

[10] Name this enzyme, a glycosyl hydrolase in human saliva that destroys the cell walls of infectious bacteria. It was first discovered in egg whites.

ANSWER: **lysozyme** [or **muramidase**; or **N-acetylmuramide glycanhydrolase**]

[10] This Scottish physician first discovered lysozyme in 1923. This scientist also shared the 1945 Nobel Prize in Physiology or Medicine for his discovery of penicillin when working with molds.

ANSWER: Alexander **Fleming**

[10] Fleming's discovery of penicillin was the first discovery of these drugs, which kill or inhibit the growth of bacteria. The beta-lactam type of these drugs includes cephalosporins (**cephalo-SPORE-ins**) and carbapenems (**carba-PEN-ums**).

ANSWER: **antibiotics** [prompt on **antibacterials**]

<Ramaswami, Science - Biology>

19. Three times a year, the priests and priestesses at this shrine make a rope that weighs over a ton to bind two nearby rocks. For 10 points each:

[10] Name this shrine, which is rebuilt every 20 years. This shrine's unique architectural style may not be copied by any other building in Japan.

ANSWER: **Ise** Jingu (**EE-say jeen-goo**) [or **Ise** Grand Shrine]

[10] The Ise Jingu is the most sacred site of this Japanese religion. This religion venerates *kami* and has a name literally meaning "the way of the gods."

ANSWER: **Shinto** [or **Shintoism**]

[10] The Ise Grand Shrine is said to hold the *Yata no Kagami*, which is a sacred one of these objects. A sword, beads, and this kind of object comprise the three Imperial Regalia of Japan.

ANSWER: **mirror**

<Jose, RMP - Other Religion>

20. It's not a storeroom, but one of these places in Ebla in modern-day Syria burned to the ground in 2300 BC, preserving most of the items contained within it. For 10 points each:

[10] Identify this type of institution. Ashurbanipal (**AH-shur-BAH-nih-PALL**) lends his name to one of these things whose contents are now largely in the British Museum.

ANSWER: **library**

[10] Unlike the scribes in Ebla, those in Egypt typically applied a reed stylus to a material made from this plant that grew in the Nile Delta.

ANSWER: **papyrus** [or *Cyperus papyrus*; or **papyrus sedge**; or **paper reed**]

[10] Another important document from ancient Mesopotamia is the Sumerian text of this type which has a man named Dumuzi living for over 3,600 years.

ANSWER: **king** list [or Sumerian **King** List]

<Bentley, History - World>

21. Hans Daucher depicted an allegorical duel between this artist and Albrecht Dürer. For 10 points each:

[10] Identify this Ancient Greek artist, regarded as the greatest of antiquity despite none of his works having survived. One of his masterpieces depicted Alexander the Great wielding a thunderbolt.

ANSWER: **Apelles** (**uh-PELL-eez**)

[10] One story about Apelles has him winning a contest to draw one of these things. In 19th-century France, Jean-Auguste-Dominique Ingres (**AANG**) led a school that emphasized these elements over color.

ANSWER: **line**

[10] Apelles studied under Pamphilus in a region of Greece that lends its name to this order of Greek architecture. Columns in this order are simpler than Ionic and Corinthian columns.

ANSWER: **Doric** order [or **Doric** columns or **Dorian**]

<Bentley, Arts - Painting>

