



PACE NSC 2017 - Round 16 - Tossups

1. The worm-like chain model was created to explain single-molecule pulling experiments done to this substance. Paul Rothemund made a Sierpiński gasket out of this substance in an example of its origami. This substance's "linking number", the sum of its twist and writhe, is a measurement of its degree of supercoil. Firing X-rays at this substance gives a diffraction pattern shaped like an (*) X. The Z-form of this substance is left-handed, unlike the more common B- and A-forms. In its native configuration, this substance has a major and minor groove. This substance has no 2-prime hydroxyl group on its five-carbon sugar, which alternates with phosphate in the backbone. For 10 points, name this macromolecule that takes a double-helix structure.

ANSWER: DNA [or deoxyribonucleic acid; or plasmid DNA; prompt on chromatin] <Silverman>

2. This philosopher used a pressure-pad-activated statue of Neptune that threatened oncomers with his trident as a model for the mechanistic nature of the body. This philosopher described spatial extension as the primary attribute of matter. He used the dismissal of the Scholastic concept of "heaviness" to explain the interaction of two distinct substances in a letter to Elisabeth of Bohemia. In his *Treatise on Man* and (*) *Passions of the Soul*, this philosopher described how the flow of animal spirits from the pineal gland controls one's senses and actions. He had a "clear and distinct idea" of the mind as a thinking thing, which led him to embrace mind-body dualism. For 10 points, name this author of *Meditations on First Philosophy*.

ANSWER: René Descartes <Kothari>

3. The losing side in this war defiantly held an April 17th marathon, during which runners twice crossed a bridge that bombers had failed to destroy. During this conflict, human organs were harvested at the "yellow house." This conflict was ended by the Kumanovo Agreement, several months the failure of the Rambouillet (rom-boo-YAY) Accords. Jiang Zemin (jyong dzuh-meen) called for the end of this conflict after a Chinese embassy was bombed. While (*) NATO was conducting a bombing campaign during this war, the leader of one side, nicknamed "Sloba," was charged with war crimes by the ICTY. This war featured ethnic cleansing of Muslim Albanians in the namesake territory, which declared its independence in 2008. For 10 points, name this late 1990s conflict between the KLA and the Yugoslav government.

ANSWER: Kosovo War [or Kosovo Conflict; prompt on Yugoslavian Civil War or Yugoslav War(s) until "namesake" is read] <Bentley>

4. A character says that one of these objects "irked me... it itched me" after he and another man find one of them on the ground and silently swap three of them back and forth. After being given one of these objects, a character discusses topics such as "the labors lost of Steinweg and Peterman," "the skull in Connemara (con-uh-MAH-ruh)," and "divine apatheia." At the opening of a play, a character peers inside one of these items while another struggles with his (*) boot. The removal of one of these clothing items ends an incoherent monologue that begins after a man wearing one is told to "Think!" Along with a barren tree, these clothing items are among the only props of a play in which Pozzo (POT-so) and his slave Lucky wear them. For 10 points, Vladimir and Estragon wear what sort of headgear in Beckett's *Waiting for Godot*?

ANSWER: bowler hats <Brownstein>

5. After one of these events near Ben Bulbin, Finn MacCool spitefully let healing water run through his fingers rather than use it to save a man wounded during it. Mabon ap Modron was rescued from prison to help with another one, as he was the only one able to control Drudwyn. Diarmuid (DEER-mwid) was fatally wounded during one of these events, another of which was caused by King Oeneus's (EE-nee-us's) failure to honor Artemis. Chiron (KYE-ron) told Heracles to use deep snow to end one of them. A comb and scissors for (*) Ysbaddaden's (ISS-bah-dah-den's) hair were retrieved by King Arthur and Culhwch (KULL-hook) during one of these events targeting Twrch Trwyth (toork trooyth). Another of these events drew dozens of heroes, including Atalanta and Meleager (MELL-ee-ay-ger). For 10 points, identify this type of event that, in two Greek myths, targeted creatures in Erymanthos and Calydon.

ANSWER: boar hunts [prompt on partial answers; accept synonyms like pig or swine for "boar"; accept synonyms and word forms like hunting a boar] <Carson>

6. An early line of kings in this modern-day country took a title meaning "Ravager of the Lands," Mwene Mutapa. The British Empire annexed this country using a creative interpretation of the Moffat Treaty and the Rudd Concession that were signed with its king, Lobengula. In the 1980s, the "spring rain that washes away the chaff," or *gukurahundi*, wiped out cattle-herding (*) Ndebele (in-DEB-eh-leh) people in this country. While searching for the city of Ophir, Karl Mauch (MAO-kh) found an Iron Age city in this country that he claimed was founded by the Queen of Sheba. That city's soapstone birds now appear on this country's flag. A 36-foot-high "Great Enclosure" remains from a medieval "Great" city that provides this country with its name. For 10 points, name this southern African country now led by Robert Mugabe.

ANSWER: Zimbabwe <Bollinger>

7. The finale of the first of these pieces intersperses a trio, a polacca, and a trio into four repetitions of a minuet, and includes parts for two natural horns and a violino piccolo. As written, the second movement of one of these works consists entirely of the two chords of a Phrygian (FRIDGE-ee-in) half-cadence, which in performance usually surround a cadenza. Alto recorders are usually used to play the (*) "echo flute" parts in one of these works, while the last of them includes a viola da gamba part probably written for the composer's patron Prince Leopold and also calls for no violins. An extensive harpsichord cadenza in the first movement of the fifth of these pieces was probably played by the composer at its 1721 premiere. For 10 points, name this set of six concerti by J. S. Bach.

ANSWER: the Brandenburg Concertos [or Brandenburg Concerti; or Six Concerts à plusieurs instruments; accept BWV 1046–1051; accept Brandenburg alone after "concerti"; prompt on concertos or concerti before "concerti"] <Carson>

8. The son of a "black sheep" member of this family is married to a South American woman named Beryl Garcia, who objects to his life of crime. That villainous member of this family proposed marriage to Laura Lyons to gain her cooperation. This family is served by Barrymore, who brings supplies to his brother-in-law, the escaped killer Selden. During the English Civil War, a member of this family named (*) Hugo offered his soul in exchange for Satan's help abducting a woman. The villainous Mr. Stapleton, who is actually part of this family, kills his relatives by taking advantage of a curse involving a spectral animal. For 10 points, Sherlock Holmes solves a mystery involving a supposedly ghostly hound plaguing an estate belonging to what family?

ANSWER: Baskervilles [or Stapletons until mentioned] <Cheyne>

9. An artist born in this country painted a woman glancing at a newspaper in a crystal ball in the left panel of his triptych *The Departure* and showed a man being hanged in a cramped tent in his 1919 painting *The Night*. A contemporary artist from this country created a series of grid paintings called *4900 Colors* and also made a series of blurred "photo-paintings". A Swiss-born artist published the *Pedagogical Sketchbook* while teaching at a design school in this country led by (*) Walter Gropius. The creator of the *Street Scenes* cycle co-founded a proto-Expressionist movement in this country whose name translates as "the bridge". For 10 points, Max Beckmann and Ernst Kirchner were among the artists labeled "degenerate" by what country's Nazi regime?

ANSWER: Germany [or Weimar Republic; or East Germany; or West Germany; or German Democratic Republic; or GDR; or DDR; or Federal Republic of Germany; or FRG; or Bonn Republic] [The contemporary artist is Gerhard Richter.] <Bentley>

10. Ernst Haeckel first applied the idea that "ontogeny recapitulates phylogeny" to members of this phylum. The Spemann organizer was discovered in an animal from this phylum. As embryos, members of this phylum form blobs of mesoderm called somites. In this phylum, cleavage is indeterminate but forms a body that is *never* radially symmetric. A morphogenetic gradient of (*) sonic hedgehog patterns the AP axis in this phylum. Organisms in this phylum, like *Xenopus*, have a blastopore that develops into the anus, making them deuterostomes, just like echinoderms. During embryogenesis, all members of this phylum have pharyngeal gill slits and a namesake tube of cartilage found below the neural tube. For 10 points, name this phylum that includes hagfish, frogs, and humans.

ANSWER: Chordata [or chordates; do not accept or prompt on "vertebrates" or "Vertebrata"] <Silverman>

11. After reading *The Count of Monte Cristo*, a character in this novel fantasizes about saying "Madam, I never eat muscatel grapes" to Mercedes. This novel ends with its protagonist resolving to "forge in the smithy of my soul the uncreated conscience of my race." The main character of this novel feels an angel has appeared to him after making eye contact with a girl wading in the sea. This novel's protagonist is almost punished for breaking his glasses while attending (*) Clongowes school, a place he is later reminded of while listening to a fiery sermon about hell at a Jesuit retreat. This novel opens with a stream of consciousness rendition of a children's story about baby tuckoo and a moocow. For 10 points, name this novel about Stephen Dedalus's intellectual development by James Joyce.

ANSWER: *A Portrait of the Artist as a Young Man* <Brownstein>

12. In a coordinate system devised by the IAU in 1958, the distribution of neutral hydrogen emissions was used to determine the "equator" of this structure. The exact number of globular clusters in this structure cannot be precisely known because some of them are obscured by this structure's "Zone of Avoidance." Harlow Shapley argued that "spiral nebulae" were merely extensions of this structure during the "Great Debate" with Heber Curtis. This structure, which is the second-largest member of the (*) Local Group, is orbited by the Large and Small Magellanic Clouds. A supermassive black hole sometimes called Sagittarius A-star lies at the center of this structure, which will eventually collide with Andromeda. For 10 points, name this galaxy, whose planets include Earth.

ANSWER: Milky Way <Jose>

13. Robert N. Bellah traced this phenomenon's progression from the Neolithic to the Axial Age in a book titled "[this concept] in Human Evolution." A text about this sociological phenomenon describes intense tribal bonding experiences known as "collective effervescence." Émile Durkheim suggested that differing integration levels of two of these institutions led to different suicide rates. Durkheim later examined the (*) totemic principle underlying primitive instances of this concept in a book about the "elementary forms of" this concept's "life." Max Weber's *Economy and Society* described three pursuits of this institution: asceticism, mysticism, and salvation. For 10 points, name this sociological concept whose well-known varieties include Christianity and Hinduism.

ANSWER: religion [or religious life; accept answers like religious attitudes or religious life] <Aggarwal>

14. Despite having a court order, Autherine Lucy was kicked out of this place. One all-white institution here was integrated after the Californian Sam "Bam" Cunningham literally ran over its defense in 1970. Deputy Attorney General Nicholas Katzenbach was the President's on-the-ground representative at this institution during a conflict chronicled in Robert Drew's documentary *Crisis*. After Vivian (*) Malone and James Hood registered to attend this place, a politician read a proclamation quoting the Tenth Amendment to justify blocking them from entering Foster Auditorium. George Wallace made his Stand at the Schoolhouse Door at this university. For 10 points, name this SEC university whose main campus is in Tuscaloosa.

ANSWER: University of Alabama [prompt on UA] <Bentley>

15. When this substance was provided to a dying man using a sponge on a reed, some onlookers said, "Wait, let us see whether Elijah will come to save him." A comment about this substance prompted a man to declare, "Woman, what does this have to do with me? My hour has not yet come." This substance prompted a man to tell a bridegroom that, unlike others, he kept the best of this substance for last; that conversation took place at (*) Cana, where some servants were instructed to fill six large stone jars during a wedding. After instructing others to consume this substance, Jesus declared, "This is my blood of the covenant." For 10 points, name this beverage that is consumed along with bread during the Eucharist, which was also the product of Jesus's miraculous transformation of water.

ANSWER: wine [accept sour wine or vinegar during the first sentence; prompt on alcohol] <Cheng>

16. The protagonist of this novel mocks book-reading while arguing against predestination in a speech that repeats his claim to be a racially-pure "man without a cross." In this novel, a massacre begins when a man hits a baby after its mother wraps it in a colorful shawl. A comic relief character in this novel, the zealous singing master David, is wounded when characters escape a cavern behind a waterfall. In this novel, "La Longue Carabine" thwarts the (*) burning of three prisoners tied to trees. This novel opens with Duncan Heyward leading Cora and Alice to Fort William Henry, and climaxes with a cliffside battle in which Uncas dies. For 10 points, name this novel in which Hawkeye's friend Chingachgook becomes the title character, a work of James Fenimore Cooper.

ANSWER: *The Last of the Mohicans* <Brownstein>

17. One of these events came as a surprise to noblemen who fought against supporters of the Constitution of May 3rd. During the rebellion that resulted in the final of these events, the inhabitants of Praga district were massacred, and a Revolutionary War veteran issued a manifesto abolishing serfdom. The Bar Confederation was unable to prevent the first of these events, while the later (*) Targowica (tar-go-VEET-sah) Confederation inadvertently precipitated one of these events. These events were allowed by the bribing of representatives to exercise the *liberum veto* at meetings of the Sejm (same), and the last of them in 1795 resulted in the target country no longer existing. For 10 points, name these events in which Austria, Prussia, and Russia divided up a country whose capital is Warsaw.

ANSWER: partitions of Poland [or partitions of the Polish-Lithuanian Commonwealth; or annexations of Poland] <Bentley>

18. This founder of the video-sharing service Waywire opposed the destruction of the residential unit Brick Towers, his former home. An electoral defeat for this man was chronicled in the documentary *Street Fight*. In a January 2017 speech, he noted that "the arc of the moral universe does not naturally curve toward justice; we must bend it." Days later, this politician was castigated for voting against a bill allowing the (*) import of drugs from Canada. This man broke with tradition and gave a speech testifying against the nomination of Jeff Sessions as attorney general. He was succeeded by Ras Baraka in a position he left to replace the late Frank Lautenberg. For 10 points, name this one-time mayor of Newark and current New Jersey senator.

ANSWER: Cory Anthony Booker <Jose>

19. The biographer Donald Spoto credits the screenwriter Angus MacPhail with coining this term, which has been used to describe a song memorized by the elderly Miss Froy and a phrase muttered by "Mr. Memory". In an interview with François Truffaut, the principal user of this term explained that this kind of thing was actually "nothing at all" by citing the example of Cary (*) Grant's character Roger trying to get one of these things from a counterintelligence agent. The military secrets in *The 39 Steps*, James Mason's actual plan in *North by Northwest*, and the title statuette in *The Maltese Falcon* are examples of, for 10 points, what plot devices that take the form of goals or objects sought by the protagonists of films, whose Scottish name was popularized by Alfred Hitchcock?

ANSWER: MacGuffins [prompt on plot devices] <Jose>

20. A parameter named for this process equals one-half the Coulomb energy of a sphere over the surface energy of the sphere. The multiplication factor K describing this process is given by the product of six other dimensionless factors, including epsilon and eta, which describe the "fast" and "thermal" types of it respectively. The semi-empirical mass formula predicts that this process occurs when Z -squared over A is greater than about 40. Heavy (*) water moderates the products of this process. This process was found to be self-sustaining in a 1942 experiment led by Enrico Fermi under a football field. It produces two new neutrons in addition to two daughter nuclides. For 10 points, name this process in which a nucleus splits in half, which powers nuclear reactors.

ANSWER: nuclear fission <Silverman>

21. During this man's reign, a series of agricultural-military colonies where peasants were overseen by soldiers modeled on Aleksei Arakcheev's (ah-rock-CHAY-eff's) Gruzino (GROO-zee-nuh) estate were founded. A popular legend holds that this emperor, who died in faraway Taganrog, faked his own death and lived as a hermit named Feodor Kuzmich. His younger brother, the Grand Duke Constantine, was supposed to succeed this king, who convinced other European powers to join his Holy Alliance. While on a (*) raft in the middle of the Niemen River, he agreed to a treaty with a man he'd soon fight the Patriotic War against. This Russian emperor agreed to the Treaty of Tilsit. The Battle of Borodino was fought during his reign. For 10 points, name this Russian emperor who withstood the invasion of his country by Napoleon.

ANSWER: Alexander I [or Alexander Pavlovich; prompt on Alexander] <Bentley>



PACE NSC 2017 - Round 16 - Bonuses

1. The biopharmaceutical industry uses a variety of unconventional purification techniques. For 10 points each:
[10] Drug formulation often involves adding an effector of this process, the aggregation of particles in a colloid into solid clumps. Clarifying agents like aluminum are used to induce this process.

ANSWER: **flocculation** [or word forms; or **coagulation**; or word forms]

[10] The last step in many polishing operations for vaccines is this process, in which water is sublimated away from a sample at very low temperatures and pressures, leaving just a purified solid product.

ANSWER: **lyophilization** [or **freeze-drying**; or **cryo-desiccation**; prompt on drying; prompt on desiccation or word forms]

[10] You definitely *won't* see pharma companies using this technique, since proteins don't respond well to being repeatedly boiled and condensed. This separations process is more often used to fractionate gasoline or purify ethanol.

ANSWER: **distillation** [or **fractional distillation**] <Silverman>

2. Answer the following about the illustrious career of mathematician Ernst Zermelo, for 10 points each.

[10] Zermelo's well-ordering theorem allows for the use of the transfinite form of this technique in set theory proofs. The regular form of this technique, which applies to finite ordinal numbers, seeks to prove that some property that is true for n in a base case is also true for n -plus-one in a namesake step.

ANSWER: mathematical **induction** [or **inductive** proof]

[10] According to this controversial statement in set theory, a transversal set, which contains exactly one element of each member of a collection of mutually disjoint nonempty sets, can always be constructed. It is often attached to Zermelo–Fraenkel set theory.

ANSWER: the **axiom of choice** [or **AC**]

[10] An equivalent formulation of the axiom of choice is Zorn's lemma, which states that if every chain of a nonempty partially ordered set has this property, then that set has a maximal element. For finite sets, the supremum (**soo-PREE-mum**) is defined as the smallest value that has this relation to the set.

ANSWER: **upper bound** [accept answers like the set being **bounded above**; do NOT accept "maximal" element or "maximum", as the supremum does not need to be a member of the set and the maximum does]

<Aggarwal>

3. The speaker of one of this man's poems wanders through the title city and finds "In every voice, in every ban, / The mind-forged manacles I hear." For 10 points each:

[10] Name this poet of "London" who asked "Dost thou know who made thee" in another poem.

ANSWER: William **Blake**

[10] Blake's aforementioned "The Lamb" is a companion to this poem, which asks the title creature, "And what shoulder, and what art, / Could twist the sinews of thy heart?" The title animal in this poem is "burning bright / In the forests of the night".

ANSWER: "The **Tyger**"

[10] In Blake's poem "And Did Those Feet in Ancient Times," the speaker wonders whether Jerusalem was built among "dark satanic" places of this sort, a phrase used by later authors to describe the machinery of the Industrial Revolution.

ANSWER: dark satanic **mills** <Bentley>

4. This structure runs parallel to a shorter, earlier one named for Wat that runs from Basingwerk to Morda Brook. For 10 points each:

[10] Identify this structure that once extended some 149 miles. It is named for the King of Mercia who ruled for most of the second half of the 8th century.

ANSWER: **Offa's Dyke**

[10] Offa's Dyke traditionally separated England from this constituent country to its West. The next in line for the British crown traditionally holds the title of prince of this place.

ANSWER: **Wales**

[10] A century after Offa's reign, Mercia was incorporated into this region, the area of England that its namesake Scandinavian invaders ruled.

ANSWER: **Danelaw** <Bentley>

5. When he wasn't collecting whips or trying to construct a "Blue-Eyed English" language free of Norman influence, Percy Grainger was a productive composer. For 10 points each:

[10] Grainger's magnum opus is this piece for concert band, consisting of six adaptations of folk songs collected during a trip to the namesake English county.

ANSWER: **Lincolnshire Posy**

[10] *Lincolnshire Posy* contains several solos for the soprano variant of this single-reed woodwind instrument. Its E-flat alto variant is the most commonly played one.

ANSWER: **saxophone** [accept soprano **saxophone** or alto **saxophone**]

[10] Grainger gave the American premiere of his friend Frederick Delius's (**DEE-lee-us's**) only work in this orchestral genre. Delius's piece was inspired by Grieg's A minor composition in this genre, which itself was inspired by Schumann's piece in the same genre and key.

ANSWER: **piano concerto** [prompt on partial answer] <Carson>

6. Answer the following about the early-1900s motion picture industry, for 10 points each.

[10] These early movie theaters, which sat a few hundred people and featured live shows and short films, debuted in 1905. Their name is a portmanteau of a Greek word for "theater" and their initial cost.

ANSWER: nickelodeons

[10] Many early movies were filmed performances of this type of live theater performance, whose name may be derived from a French expression meaning "voice of the city". Tony Pastor pioneered these performances, which often featured music, dancing, acrobatic, juggling, and a variety of other unrelated acts.

ANSWER: vaudeville shows

[10] This man's film studio produced many shorts, such as *The Great Train Robbery* and 1905's *The Night Before Christmas*. He is better known for inventing the kinetoscope, an early film projector.

ANSWER: Thomas Alva Edison <Jose>

7. The primary theme of this ballet's final section was based on fiddler William Hamilton Stepp's rendition of the folk song "Bonaparte's Retreat". For 10 points each:

[10] Name this 1942 ballet, sections of which have such titles as "Buckaroo Holiday" and "Saturday Night Waltz". At its climax, its tomboyish protagonist shares a kiss with the Champion Roper.

ANSWER: Rodeo (ROH-dee-oh or roh-DAY-oh)

[10] *Rodeo* was scored by this American composer, whose other popular ballets include *Billy the Kid* and the Martha Graham collaboration *Appalachian Spring*.

ANSWER: Aaron Copland (KOPE-land)

[10] On the strength of her choreography for *Rodeo*, this woman was hired to choreograph the Rodgers and Hammerstein musical *Oklahoma!*.

ANSWER: Agnes de Mille [or Agnes George de Mille] <Carson>

8. This politician's family was supposedly cursed after his great-grandfather massacred some followers of Cylon. For 10 points each:

[10] Identify this son of Megacles who turned to the Athenian people for support after the Spartans tried to replace him with Isagoras. He is often grouped as the fourth Athenian reformer after Draco, Solon, and Pisistratus.

ANSWER: Cleisthenes of Athens [or Clisthenes]

[10] Cleisthenes is generally held to be the founder of this system of government in Athens. Meetings at the Ecclesia were a central feature of this system.

ANSWER: Athenian democracy

[10] Before his exile, Cleisthenes held this Athenian office, which was held concurrently by the city's three chief magistrates held concurrently. The highest-ranking holder of this title was known as the "eponymous" since he lent his name to the year, and the one who commanded the army was the polemarch.

ANSWER: archon <Bentley>

9. According to a Mapuche myth, these things are caused in rivers by sinuous fox-like creatures called Nguruvilu. For 10 points each:

[10] Name these natural phenomena. One of them off the coast of Scotland is caused either by the hag Cailleach Bheur (CALL-yukh BURR) washing her tartan in the Gulf of Corryvreckan, or more likely by a tidal race.

ANSWER: whirlpools [accept maelstroms or vortexes or vortices]

[10] According to the Tonga people, whirlpools can be caused by the river god Nyami Nyami, who has the body of one of these creatures. Australian Aborigines believe that one of these creatures created waterholes and riverbeds during the Dreamtime.

ANSWER: serpents [or snakes; accept the Rainbow Serpent]

[10] Greek myths differ on whether this serious hazard to sailors was a whirlpool or a sea monster, but in any case it was definitely located across a narrow channel from the cliff home to its equally hazardous counterpart.

ANSWER: Charybdis <Carson>

10. Charles Simić (SEE-meech) won the 1990 Pulitzer Prize for a collection of poems of this form titled *The World Doesn't End*. For 10 points each:

[10] Name this type of poetry that uses blocks of text instead of lines. This term more generally identifies a type of writing contrasted with verse.

ANSWER: prose poetry

[10] An oft-anthologized prose poem by Carolyn Forché is titled for a man of this rank who shows the speaker a bag of severed ears. This is the rank of the patriarch of the Sartoris family, who appears in Faulkner works like "A Rose for Emily."

ANSWER: colonel

[10] Prose poems about various objects appear in this poet's collection *Tender Buttons*. This woman wrote the line "a rose is a rose" and coined the term "Lost Generation" while running a salon in Paris.

ANSWER: Gertrude Stein <Brownstein>

11. In 2006, this country made its deaf community's sign language one of its three official languages. For 10 points each:

[10] Name this Southern Hemisphere country home to the All Blacks rugby team, whose other official languages include English and Māori.

ANSWER: New Zealand [or Aotearoa]

[10] The All Blacks often play in Eden Park in this New Zealand city that was built on an isthmus, one side of which borders the gulf containing Rangitoto and Waiheke (WHY-heh-keh) Islands. Its Cornwall Park contains the volcanic peak known in English as One Tree Hill.

ANSWER: Auckland [or Tāmaki-makau-rau]

[10] Most proposals for a new flag of New Zealand involve this specific plant, whose fronds appear in the All Blacks' logo, the compartment of New Zealand's seal of arms, and in the *koru* symbol that inspired the Māori flag.

ANSWER: silver ferns [or Cyathea dealbata; or silver tree-ferns; or kaponga; prompt on ferns] <Carson>

12. Alasdair MacIntyre argued against the claim that "the telos of tolerance is truth" in this philosopher's essay "Repressive Tolerance," which critiques tolerance of viewpoints that reinforce oppression. For 10 points each:
[10] Name this German-born philosopher whose *One-Dimensional Man* argued that capitalism causes a "flattening out" through "repressive desublimation."

ANSWER: Herbert **Marcuse**

[10] Marcuse was affiliated with this Marxist school of critical theory, named for a German city, whose other theorists included Theodor Adorno and Erich Fromm.

ANSWER: **Frankfurt** School

[10] Marcuse's *Eros and Civilization* synthesizes Marxism with the theories of this author of *Civilization and Its Discontents*. In *Life After Death*, Norman Brown applies this psychologist's theories of psychosexual development to topics like Lutheranism and Jonathan Swift's poetry.

ANSWER: Sigmund **Freud** <Kothari>

13. This man's naturalist works include *Notes on Some of the Birds of Oyster Bay, Long Island* and *Hunting Trips of a Ranchman: Sketches of Sport on the Northern Cattle Plains*. For 10 points each:

[10] Identify this onetime Assistant Secretary of the Navy and Governor of New York whose book *Through the Brazilian Wilderness* chronicled his nearly fatal 1913 to 1914 tropical misadventure.

ANSWER: Theodore **Roosevelt** [or Teddy **Roosevelt**; or **TR**]

[10] Roosevelt's other writing includes a biography of the Missouri Senator Thomas Hart Benton. This other President, with Ted Sorensen, included Benton in his popular *Profiles in Courage*. He was the country's first Catholic president.

ANSWER: **John Fitzgerald Kennedy** [or **JFK**; or **Jack Kennedy**]

[10] Two years after his Benton biography, Roosevelt chronicled the life of this Pennsylvanian. You can thank this member of the Committee of Style at the Constitutional Convention for giving us decimal coinage.

ANSWER: Gouverneur **Morris** Sr. <Bentley>

14. A student of this character relates how he measured the length of a flea's jump by dipping its legs in molten wax. For 10 points each:

[10] Name this philosophizing character who operates a school called the Thinkery, where Strepsiades enrolls his son in the play *The Clouds*.

ANSWER: **Socrates**

[10] This dramatist's play *The Clouds* satirized Socrates, whom he addresses with a speech detailing a creation myth in Plato's *Symposium*. This playwright's other comedies include *The Frogs* and *The Birds*.

ANSWER: **Aristophanes**

[10] Aristophanes also satirized this demagogic politician, who is overthrown by a sausage-seller in *The Knights*. *The Wasps* features a father and son whose names indicate that they love and hate this man, respectively.

ANSWER: **Cleon** <Brownstein>

15. An early example of these works titled *Minutiae* spent several years affixed to the top of John Cage's tour bus. For 10 points each:

[10] Identify these artworks that generally consist of a painted surface to which three-dimensional objects are affixed. A notable example of them titled *Monogram* includes a stuffed Angora goat and a tire mounted on a wooden platform.

ANSWER: **combines**

[10] *Minutiae* was a collaboration between Robert Rauschenberg and this American Pop artist. The Whitney Museum owns this artist's *Three Flags*, one of his many encaustic paintings of the American flag.

ANSWER: Jasper **Johns**

[10] A rooster stands on top of a Rauschenberg combine whose title is a play on the name of this type of women. A painting of one of these women with an extra-long back holding a peacock-feather fan was completed by Jean-Auguste-Dominique Ingres (**ANG-ruh**) in 1814.

ANSWER: **odalisques** [accept ***Odalisk*** or ***La Grande Odalisque***] <Bentley>

16. Under certain initial conditions, the "swinging" variant of this setup can experience unusual periodic or collision orbits. For 10 points each:

[10] Name this device consisting of two weights, usually of unequal mass, connected by an ideal massless string hung over an ideal massless pulley.

ANSWER: **Atwood's machine**

[10] One can derive a system of equations for the acceleration of an Atwood machine by using this basic law of classical mechanics, which in its simplest form states that mass is equal to force times acceleration.

ANSWER: **Newton's second** law of motion [prompt on partial answer]

[10] The acceleration equation can be substituted back into one of the force equations to determine the tension in the system, which is equal to little g times this function of the two masses.

ANSWER: **harmonic mean** [prompt on **mean**] <Carson>

17. Cloning vectors are often named according to their origin of replication, their copy number, and the form of this trait that they impart. For 10 points each:

[10] Name this trait that is used as a selection pressure when doing bacterial culture. This trait is granted by enzymes like chloramphenicol acetyltransferase or beta-lactamase.

ANSWER: **antibiotic resistance** [or **drug resistance**; or obvious equivalents like being **insensitive** to **antibiotics**]

[10] When growing *E. coli* in liquid culture, the appropriate antibiotic must be added to the culture medium, which is often this pungent yellow liquid composed of a 2-to-2-to-1 ratio of salt, tryptone, and yeast extract.

ANSWER: **Luria broth** [or **lysogeny broth**; or **LB**; or **Lewis broth**; or **Luria-Bertani medium**]

[10] If you just want to grow individual colonies, you'd use solid agar as the growth substrate, immobilized in one of these dishes. These shallow dishes are often just called "plates".

ANSWER: **Petri** dishes <Silverman>

18. In religions characterized by this doctrine, there exist two fundamental and mutually-opposed principles underlying the existence of the world. For 10 points each:

[10] Name this doctrine, whose name comes from the Latin word for "two". It is exemplified by the pairing of the Demiurge and the supreme God in Gnosticism, and the pairing of light and darkness in Manichaeism (man-ih-KEE-ism).

ANSWER: dualism [accept word forms like dualistic]

[10] In Zoroastrianism, dualism can be found in the relationship between these two beings, a creator deity and an evil spirit respectively. The former will defeat the latter during Frashokereti (FRAH-shoh-kuh-REH-tee).

ANSWER: Ahura Mazda AND Angra Mainyu [accept Ormazd in place of "Ahura Mazda" and Ahriman in place of "Angra Mainyu"]

[10] The dualist Marcion of Sinope taught that the God described in this religious text was not the God taught by Jesus. The protocanonical books, but not the deuterocanonical ones, derived from this text.

ANSWER: Tanakh [accept Hebrew Bible or Hebrew Scriptures or Mikra; prompt on the Old Testament; prompt on the Bible; anti-prompt (ask the player to be less specific) on the Torah or the Pentateuch] <Cheng>

19. In one of this man's philosophical short stories, the protagonist leaves his family and no longer sees visions of the title figure after that title figure fails to sufficiently define "eternal truth". For 10 points each:

[10] Name this author of "The Black Monk". He wrote a story in which Dr. Ragin argues with his patient Gromov over whether one can be just as happy in prison as anywhere else.

ANSWER: Anton Pavlovich Chekhov

[10] Dmitri Gurov, the protagonist of this Chekhov story, uses the title animal to start a relationship with the married title character, Anna Sergeyevna von Diderits (DEE-der-itz) while on vacation in Yalta. Later, Gurov pursues this story's title character to a theater in her home town.

ANSWER: "The Lady with the Dog" [or "The Lady with the Lap Dog"; or "The Lady with the Little Dog"; or "Dama s sobachkoi"]

[10] In this Chekhov play, published in the author's last year of life, Madame Ranevskaya bursts into tears when Lopakhin (lo-pah-KHEEN) announces he has purchased her estate and intends to cut down the title wooded area.

ANSWER: *The* Cherry Orchard [or Vishnyovy sad] <Bentley>

20. This kingdom's rule reached a zenith under Taharqo, a ruler who built a massive temple at Gempaaten and who is commemorated in a sculpture depicting him as a Sphinx. For 10 points each:

[10] Name this ancient kingdom, whose rulers, or *qores*, made up the 25th Dynasty of pharaohs. This kingdom spanned much of Sudan and had its capitals at Napata and Meroë (MARE-oh-ay).

ANSWER: Kingdom of Kush

[10] The northern boundary of the Kingdom of Kush is traditionally set at the first cataract of this river system. This river system empties into the Mediterranean at its namesake "delta."

ANSWER: The Nile River

[10] This son of King Kashta was the second Kushite pharaoh. He is primarily remembered for commissioning a namesake stone that contains a reproduction of the Memphite Theology, which contains the origin story of Ptah.

ANSWER: Shabaka [or Shabaqo] <Jose>

21. This man is asked to "Help us save free conscience from the paw / of hireling wolves whose Gospel in their maw" in a poem commenting on the Committee for Propagation of the Gospel. For 10 points each:

[10] Identify this "restless" person who "could not cease / In the inglorious arts of peace" and is described as "the War's and Fortune's son" in a poem about his return from Ireland.

ANSWER: Oliver **Cromwell**

[10] Andrew Marvell's poem about Oliver Cromwell is an example of the Horatian version of this type of poem. Another poem of this type addresses a "foster-child of Silence and slow Time" and a "still unravished bride of quietness."

ANSWER: **ode** [or "**Ode** on a Grecian Urn"]

[10] The speaker of this Marvell poem declares "I would / Love you ten years before the Flood". It opens with the line, "Had we but world enough, and time".

ANSWER: "**To His Coy Mistress**" <Bentley>