

1. **This man learned the ropes under his uncle, Maurice Suckling. This man executed Admiral Caracciolo of the Pathenopean Republic as a favor for his lover, a former prostitute. While serving under Samuel Hood, this man was wounded during a siege of Calvi. This adulterous lover of (\*)**

Emma Hamilton was knighted for his role under John Jervis at Cape St. Vincent. He once held a telescope to his blind eye to deliberately avoid seeing orders from Hyde Parker not to bombard Copenhagen. Seven years after winning at Aboukir Bay, he gave a signal saying "England expects that every man will do his duty" from the HMS *Victory* on Spain's southern coast. For 10 points, name this naval commander honored by a London "column", who was killed at the Battle of Trafalgar.

ANSWER: Vice-Admiral Horatio Nelson [or Sir Horatio Nelson, Viscount Nelson of the Nile and Burnham Thorpe]

<Bentley>

2. **This issue is addressed by philosopher William Rowe with the example of a deer caught in a forest fire. John Hick's argument from "soul-making" and Alvin Plantinga's Free Will Defense both aimed to resolve this issue. David Hume's statement of this problem included the question "Is he willing... but not able? Then he is impotent." In the 17th century, the principle of sufficient reason was invoked to resolve this problem in (\*) Leibniz's *Theodicy*, which claimed that that this world was created as the "best possible world." Augustine defined away the central concept of this problem as a non-thing, since it is a mere lack of goodness. For 10 points, name this problem in religious philosophy which asks why a good God allows suffering.**

ANSWER: problem of evil [accept any descriptive answer indicating the issue of whether, why, how, etc. a good God allows evil, suffering, etc. to exist; accept answers such as "whether we live in the best of all possible worlds until "best" is read]

<Jackson>

3. **The primary member of these ecosystems are preyed upon by *Acanthaster planci*, whose surface resembles a crown of thorns. The so-called "cement" of these ecosystems is a crustose, pink member of *Rodophyta*. The evolution of the structure of these ecosystems was the subject of the first monograph of Charles Darwin. Their primary members are in a mutualistic relationship with zooxanthellae. Of their three main types, the "fringing" type occupies a shallow zone of water while an (\*) atoll is a lagoon surrounded by one. These ecosystems are threatened by widespread "bleaching". For 10 points, name these ecosystems primarily constituted of calcium carbonate secreted by corals, which form a giant "barrier" near Queensland, Australia.**

ANSWER: coral reefs [prompt on corals; prompt on oceans]

<Jose>

4. **An essay about this substance outlines a triangle that distinguishes "natural" methods of using it from a cultural one that involves a pot of water. *Mythologies* claims this substance metaphorically bestows a "bull-like strength" and is part of the "same sanguine mythology as wine". A book by Michael Pollan explores the benefits of humans avoiding this substance, an action backed by Peter (\*) Singer and devout Jains. Claude-Levi Strauss explored humans' history of consuming this substance in "The Culinary Triangle" and "The Raw and the Cooked". A type of it is paired with "frites" in a Barthes essay about the kind that comes from cows. For 10 points, *The Omnivore's Dilemma* examines the cost of what type of food, examples of which include steak?**

ANSWER: meat [or flesh; accept any specific examples of meats as well, including steak, pork, roasts, etc...; also accept "eating meat" or other such phrases; prompt on "food" before "avoiding"]

<Spencer>

5. During one protest in this nation, demonstrators on Molesworth Street wore bicycle helmets to protect against police batons, and in another incident here a Cessna 172 dropped flour bombs on a stadium. In this nation, Fernando Pereira died during Operation Satanic. This nation was accused of abrogating the Gleneagles Agreement when its leader, Robert Muldoon, allowed the 1981 Springbok tour, pitting its national (\*) rugby team against South Africa's. French agents, on President Mitterand's orders, sank the Greenpeace flagship *Rainbow Warrior* here. After the Flagstaff and Musket Wars, its first governor, William Hobson, signed the vague Treaty of Waitangi with its native population. For 10 points, name this home of the Maori people.

ANSWER: New Zealand [or Aotearoa]

<Mukherjee>

6. This language was used to relate the story of SS officer Maximilien Aue (OW-uh) in Jonathan Littell's *The Kindly Ones*. A poem written in this language poses the question "But can one kill Remorse?" and begins many stanzas with the phrase "at the end of daybreak". Four plays, including *Escape*, were written in this language by Gao Xingjian, who now lives in a country where it is spoken. In a Shakespeare adaptation in this language, Caliban rejects his name and demands to be called "X". The author of (\*) "Notebook of a Return to My Native Land" and *A Tempest* wrote in this language, as did the other leaders of the *négritude* movement. For 10 points, name this language used by Léopold Senghor and Aimé Césaire, as well as by Victor Hugo.

ANSWER: French [or le française]

<Carson>

7. According to legend, Saint Columba performed this non-verbal action to make the Loch Ness monster disappear. John Wesley mysteriously made performing this action after infant baptism both mandatory and optional in his revision of the *Book of Common Prayer*, though it is uncommon in Methodist practice. Orthodox Christians hold their (\*) thumb, index finger, and middle finger together while performing this action from right to left. This practice is performed alongside the Trinitarian formula, the saying of "in the name of the Father, and of the Son, and of the Holy Spirit." For 10 points, name this blessing in which one traces the object Christ was crucified upon.

ANSWER: making the sign of the cross [or signum crucis; or crossing oneself; accept answers mentioning the sign of the cross or crossing]

<Gupta>

8. In one of this man's poems, he wrote that "the tree of man was never quiet then 'twas the Roman, now 'tis I." In a poem about a figure jailed "for the colour of his hair," a reference to homosexuality, this man asked "Oh who is that young sinner with the handcuffs on his wrists?" This man's poetry was influenced by his unrequited love for Oxford classmate Moses Jackson. This poet wrote that (\*) "malt does more than Milton can to justify God's ways to man" in a poem about a character who "eats his victuals fast enough." That poem by him appears in a collection with "When I was one-and-twenty" and "To An Athlete Dying Young." For 10 points, identify this English poet, the author of the collection *A Shropshire Lad*.

ANSWER: Alfred Edward Housman

<Gerr>

9. Eleven atoms of this element, and eleven halides, are found in the strongest known single-molecule acid. This element's allotropes form 12-atom icosahedral clusters. A compound containing only this element and hydrogen unusually exhibits three different bond angles and bonds of order one-half. The formation of a pi complex allows this element to add to the less substituted carbon of a double bond. This element and (\*) gallium are used to dope silicon p-type. Nearly all compounds of this element are Lewis acidic since it violates the octet rule by only having six electrons. It's the first element with a ground-state p electron. For 10 points, name this first metalloid, which has atomic number 5.

ANSWER: boron [or B]

<Silverman>

10. Karl Straube premiered many works for this instrument by Max Reger. Charles Ives' *Variations on "America"* was originally written for this instrument. It's not a brass instrument, but genres for this instrument include the "voluntary" and "chorale prelude". One player of this instrument organized a series of concerts on the five Sundays before Christmas; those *Abendmusik* concerts in (\*) Lübeck inspired another composer to legendarily walk 250 miles to hear their performer, Dietrich Buxtehude. J.S. Bach's major works for instrument include his *Fantasia and Fugue in G minor* and his *Toccatina and Fugue in D minor*. For 10 points, name this keyboard instrument that includes stops and pipes, and which is often found in churches.

ANSWER: pipe organ

<Lawrence>

11. In general relativity, there are "weak", "dominant", and "strong" versions of a condition on matter distribution named for this quantity. This quantity is the second namesake of a tensor whose spacelike diagonal components are pressure components. That tensor, which contains this quantity's density in its upper left entry, is named for stress and this quantity. The amount of this quantity (\*) stored in a magnetic field is given by the volume integral of B squared over 2 mu-nought, while for a capacitor it equals one-half Q times V. Voltage equals this quantity per unit charge, so Kirchhoff's loop rule can be seen as a statement of its conservation. The rate at which this quantity is consumed to do work is given by power. For 10 points, name this quantity measured in joules.

ANSWER: electric potential energy

<Eltinge>

12. One author from this country wrote a novel which opens with the assassination of a sleeping man by Chen Ta Erh and chronicles a revolt led by Kyo Gisors. In another novel from this country, Léon Robinson is met in an African trading post and at a Ford plant in Detroit by Ferdinand Bardamu. The authors of *Man's Fate* and *Journey to the* (\*) *End of Night* are from this country. A plesiosaur battle and an emergence from Stromboli figure in a novel by an author from this country who also wrote a novel in which a black flag is planted at the South Pole by a man who captures the harpooner Ned Land and Professor Pierre Arronax aboard the *Nautilus*. For 10 points, name this birthplace of Andre Malraux, Louis-Ferdinand Celine, and Jules Verne.

ANSWER: France [or the French Republic; or République française]

<Carson>

13. This speech recalls a period of "ownership here and there in a few quilts and pumpkins and chickens (gathered from miscellaneous sources)", and its orator preferred "severe and constant struggle" to "artificial forcing." It expressed hope that "nearly sixteen millions of hands" will pull a load upward. A story in this address occurs at the mouth of the (\*) Amazon river. This speech likens a society united for "mutual progress" to a multi-fingered hand, and argues that earning a dollar in factory is worth "infinitely more" than spending a dollar in an opera house. Delivered at a cotton exposition, it urged blacks to "Cast down your bucket where you are." For 10 points, name this speech derided by DuBois, given in a large Southern city by Booker T. Washington.

ANSWER: the "Atlanta Compromise" [or Booker Taliaferro Washington's Atlanta address; accept any answer indicating a speech by Booker T. Washington to the Atlanta Cotton States and International Exposition of 1895]

<Bentley>

14. Todd Decker wrote a book examining this man and jazz titled *Music Makes Me*. This man choreographed nearly all of his musical numbers with his "near double", Hermes Pan. He's not Al Jolson, but this man performed "Steppin' Out with My Baby" and "Bojangles of Harlem" in blackface in *Swing Time*. Jane Powell played a character based on this man's sister Adele in the movie (\*) *Royal Wedding*, which includes the songs "Sunday Jumps" and "You're All the World to Me", for which this man danced with a hat rack and on the walls and ceiling, respectively. In another film, he and a chorus of copies of him perform "Putting on the Ritz" in top hats and tails. For 10 points, name this dancing partner of Ginger Rogers.

ANSWER: Fred Astaire [or Frederick Austerlitz]

<Bentley>

15. A knight wearing a feathered hat looks up at this scene in a Lucas Cranach the Elder painting partly titled for a centurion. French artist James Tissot adopted a first person, top-down perspective for his version of this scene. Two flying angels hold chalices in a version of this scene once owned by chemist Ludwig Mond. Caspar David Friedrich's *Tetschen Altarpiece* sets this scene in a (\*) mountain landscape, while Salvador Dali depicted it using the net of a hypercube. This scene is depicted above a supine skeleton and in front of God the Father in Masaccio's *Holy Trinity*. A man climbs over a fence as three Breton peasant women pray around this scene in a Gauguin painting. For 10 points, name this scene depicted in *The Yellow Christ*.

ANSWER: the Crucifixion of Jesus Christ

<Bentley>

16. *Floating head* mutants in zebrafish lack this structure. It can be easily studied in ascidians because it only consists of 40 cells. A protein secreted by this structure induces a concentration gradient of the same protein in the floor plate. Its namesake process is formed by cells from the primitive knot migrating away from the primitive groove. This structure develops into the nucleus pulposus. This structure secretes (\*) Sonic hedgehog homolog to establish the dorsal-ventral axis. It induces the ectoderm to form the neural plate. This structure derived from the mesoderm is made of a cartilage-like material. For 10 points, name this structure which is present in all vertebrate embryos, and is the namesake of the phylum containing vertebrates.

ANSWER: notochord

<Silverman>

17. Anthropologist Roy Chapman Andrews visited this country in 1922 and heard its prime minister discuss a cryptid that is five feet long, can discharge a fatal blast of electricity, and can spit acid that turns anything yellow and kills humans. This country's Djadochta Formation is the location of a sandstone ridge named for its orange-red color where all known (\*) velociraptor fossils have been found, the Flaming Cliffs. The Ubsunur Hollow is located near this most sparsely-populated country's border with Russia. Orkhon is the smallest of this country's "aimag" provinces and is home to its second most populous city, Erdenet. For 10 points, name this Asian country where most of the Gobi Desert is located.

ANSWER: Mongolia [or Mongol Uls]

<Karas>

18. Oppositely-moving chariots tore apart a ruler of this city who vacillated on which side to support during an evenly-pitched battle. This city was founded on the site where a white sow was found suckling thirty piglets, and its initial settlers came from the overcrowded earlier city of Lavinium. Mettius Fufetius led this city during its conflict against Tullus Hostilius. (\*) Amulius used his control over this city's treasury to take its throne from his brother Numitor. This city lost a war settled by a three-on-three duel by two sets of male triplets. Ascanius founded this city, where the Vestal Virgin Rhea Silvia gave birth to twin sons of Mars. For 10 points, name this home city of Romulus and Remus, an early rival to Rome.

ANSWER: Alba Longa

<Jose>

19. A doctor in this book wrongly believes that a mob will lynch him for refusing to leave his office to attend to a girl killed in a buggy accident. While writing his sermons in a bell-tower, a reverend in this book watches Kate Swift and becomes infatuated with her. The teaching career of one character in this work ends when a mentally disabled student mistakes his friendly (\*) caresses for romantic advances. Wing Biddlebaum, the protagonist of the story "Hands", is one of several people to confide in the young reporter George Willard in this work, which opens with a prologue called "The Book of the Grotesque". For 10 points, name this cycle of stories set in a Midwestern town, by Sherwood Anderson.

ANSWER: Winesburg, Ohio

<Lawrence>

20. Lionel Wigram's drill tactics in war assumed that soldiers were 25% "gutful", 50% sheep, and 25% cowards. The use of the reconstituted Territorial Army was vastly expanded one side's military in this war, but triggered the Salerno mutiny. Hugh Dowding resisted the Big Wing strategy during this war, in which a damaged cargo ship at Bari released mustard gas on civilians. The "88 millimeter" gun was first used by the losers of this war, in which (\*) Operation Tidal Wave targeted the Ploesti oil fields. Operation Sea Lion was thwarted by radar during an aerial campaign in this war, whose battles included Bastogne and Kasserine Pass. For 10 points, name this war in which Bernard Montgomery led troops at El Alamein against Erwin Rommel's Axis forces.

ANSWER: World War II [or equivalents]

<Ray>

21. A nine-year survey of this phenomenon conducted by the Center for Astrophysics led to the discovery of the Great Wall supercluster. One quantity with this name is equal to  $GM$  over  $c$  squared times  $R$  in the gravitational case, and is roughly equal to relativistic beta for low velocities. That quantity, symbolized  $z$ , has been measured at values as high as (\*) 9.4 for gamma ray bursts and 7.1 for quasars. The expansion of the universe means that this effect is universally observed in cosmological radiation, because it arises from the Doppler effect for an emitter moving away from an observer. For 10 points, name this increase in radiation wavelength, named for a long-wavelength color.

ANSWER: redshift [prompt on Doppler shift or effect before mention]

<Eltinge>

22. This country's first female head of state ran an opposition paper called *La Prensa*. After two US mercenaries were shot here, a note from "dollar diplomacy" advocate Philander Knox legitimized US intervention here, which was shored up by the Bryan-Chamorro treaty. While led by René Schick, this country allowed troops heading to the Bay of Pigs invasion to depart from here. During the mid-20th century, a man named Anastasio began four decades of (\*) Somoza family rule here. After Mexico, the filibuster William Walker tried to conquer this country, where funds investigated by the Tower Commission attempted to help unseat Daniel Ortega. For 10 points, name this Central American nation where the Sandinistas fought the US-backed Contras.

ANSWER: Republic of Nicaragua [or República de Nicaragua]

<Jackson>

23. In two separate but identical passages, this character considers hanging a portrait of Henry Ward Beecher across from one of General Gordon. In an early appearance, he writes a list containing entries like "Knows nothing of practical gardening" and "Knowledge of Literature. - Nil". In a memorable exchange, this character is told that he sees, but he does not observe. This character frequently alludes to a wound produced by a (\*) "Jezail bullet" that pierced him during his service in Afghanistan. This character, who eventually marries Mary Morstan, offers to become his friend's biographer in the novel which introduces them, *A Study in Scarlet*. For 10 points, name this Arthur Conan Doyle character, the assistant of Sherlock Holmes.

ANSWER: Dr. John Watson [accept either underlined portion]

<Gupta>

24. A popular political party in this country was founded in exile by Víctor Haya de la Torre. This country's informal economy, including the shanty towns called "pueblos jóvenes," was described in *The Other Path*, by non-explorer economist Hernando de Soto. The second half of *A Fish in the Water* is a memoir by a candidate for this country's presidency, whose FREDEMO coalition lost to a man supported by APRA and Cambio 90. The capture of (\*) Abimael Guzman in this country ended a string of human rights abuses meant to bring down the Maoist insurgency group Shining Path. For 10 points, name this country led in the 1990s by Alberto Fujimori, which recently regained artifacts stolen from Machu Picchu.

ANSWER: Republic of Peru [or República del Perú]

<Bailey>

1. This thinker used a series of dialogues between Fabrizio and Cosimo to frame *The Art of War*, and in his most famous work he claimed that it is more important to be feared than loved. For 10 points each:

[10] Name this Italian political philosopher who used Cesare Borgia as the inspiration for *The Prince*.

ANSWER: Niccolo di Bernardo dei **Machiavelli**

[10] In *The Prince*, Machiavelli compares this entity to a woman who must be beaten into submission. Boethius popularized one depiction of this figure in *The Consolation of Philosophy*, which laments her "fickle bounty."

ANSWER: **fortune** [or **Fortuna**]

[10] This other work by Machiavelli, a commentary on a Roman historian's *Ab Urbe Condita*, uses a distinction between the *vivere sicuro* and the *vivere libero* to support the establishment of republics.

ANSWER: **Discourses on Livy** [or **Discourses on the First Decade of Titus Livy**; or **Discourses on the First Ten Books of Titus Livy**; or **Discorsi sopra la prima deca de Tito Livio**]

<Kothari>

2. A major theorist of this movement, Max Nordau, decried the physical weakness of his compatriots in an address calling for a new, "muscular" version of its adherents. For 10 points each:

[10] Name this movement that underwent a key directional shift in the Biltmore Program. Its Revisionist branch was led by Vladimir Jabotinsky, who opposed the Uganda plan.

ANSWER: **Zionism** [or **Zionist** movement; prompt on "Judaism" or "Muscular Judaism"]

[10] This Austro-Hungarian reporter, the author of *The Jewish State* and *Altneuland*, is generally recognized as the father of Zionism.

ANSWER: Theodor **Herzl**

[10] This 1917 letter to Baron Rothschild from the British Foreign Secretary, which ambiguously promised a Jewish "national home" in Palestine, was a major success for Zionism.

ANSWER: **Balfour** Declaration

<Ray>

3. Name these surfaces, for 10 points each.

[10] This surface is generated by rotating a circle around a line in the plane of the circle. A real-life example is a doughnut, which topologists are legendarily unable to differentiate from a coffee mug, since they are homeomorphic.

ANSWER: **torus** [or **toroid**]

[10] This shape is a prism whose six faces are all parallelograms. Its volume is commonly derived as the scalar triple product in multivariate calculus.

ANSWER: **parallelepiped** [or **rhomboid**; prompt on **prismatoids**]

[10] This surface is generated by revolving the graph of  $y = \frac{1}{x}$  about the x-axis, for  $x > 1$ . Interestingly, it has an infinite surface area, but finite volume.

ANSWER: **Gabriel's horn** [or **Toricelli's trumpet**]

<Reinstein>

4. During this ceremony, a spice tower is passed around for everyone to smell the fragrance. For 10 points each:

[10] Name this weekly prayer, taking place on Saturday evening, which symbolizes the "separation" between the work week and the weekend.

ANSWER: **Havdalah**

[10] The Havdalah marks the end of this Jewish holiday, the weekly day of rest.

ANSWER: **Shabbat** [or **Sabbath**; or **Shabbos**]

[10] During the celebration of Shabbat, people say a blessing over two loaves of this bread, commemorating the miracle of a double portion of manna during the Exodus.

ANSWER: **challah**

<Gupta>

5. In one poem, this poet described victory filling "the little rented boat" and everything becoming "rainbow, rainbow, rainbow!" For 10 points each:

[10] Name this poet of "The Fish" who claimed that "the art of losing isn't hard to master" in the villanelle "One Art" and wrote the collections *North and South* and *Geography III*.

ANSWER: Elizabeth **Bishop**

[10] In Bishop's poem "The Armadillo," one of these events destroys an owl's nest. The speaker of a Robert Frost poem notes that "from what I've tasted of desire", he holds with those who favor this sort of event for the ending of the world.

ANSWER: **fire** [or **burning**; do not accept "ice"]

[10] A Bishop poem about this Daniel Defoe character "In England" observes "My island seemed to be a sort of cloud-dump" and remarks that "Friday was nice, and we were friends."

ANSWER: **Robinson Crusoe** [accept either underlined portion]

<Mehigan>

6. The central characters of this story luck into success when it turns out the priests of Kafiristan are aware of Masonic rituals, but their schemes run into trouble when Daniel Dravot is bitten by a girl, revealing their mortality. For 10 points each:

[10] Name this story, told as a flashback by Peachy Carnahan, in which Dravot and Carnahan attempt to follow in the footsteps of Alexander the Great.

ANSWER: "The **Man Who Would Be King**"

[10] Teshoo Lama searches for the "River of the Arrow" in this novel by the same author, whose title character works with Mahbub Ali and Hurree Babu to spy for the British in the Great Game.

ANSWER: **Kim**

[10] *Kim* and *The Man Who Would Be King* were both written by this Indian-born British author of the *Just-So Stories* and *The Jungle Book*.

ANSWER: Rudyard **Kipling** [or Joseph Rudyard **Kipling**]

<Carson>



7. Answer these questions about so-called "enlightened despots", who claimed to take up liberalizing ideas in the late 18th century, for 10 points each.

[10] Joseph II tried to abruptly end this institution in the Austrian empire, but most nobles ignored him. Alexander II of Russia ended this agricultural system in 1861.

ANSWER: serfdom [accept any answer indicating the abolition of serfdom or the emancipation of serfs]

[10] This French intellectual wrote letters to Catherine the Great to advise her. He helped publish the treatise *Anti-Machiavel* after befriending Frederick the Great of Prussia.

ANSWER: Voltaire [or Francois-Marie Arouet]

[10] Frederick the Great commissioned this elaborate, pastel-yellow palace in Potsdam, where he hosted Voltaire and other intellectuals.

ANSWER: Sans-Souci

<Jackson>

8. Identify the following about landscape design, for 10 points each.

[10] Jules Hardouin-Mansart's Orangerie and André Le Nôtre's Grand Canal are among the notable features of the extensive gardens at this French palace, which also features seven salons named for Roman gods and the Hall of Mirrors.

ANSWER: the Palace of Versailles [or the Château de Versailles]

[10] One of the first people to adopt the title of "landscape architect" was this designer of Boston's "Emerald Necklace", who worked with Calvert Vaux ("vawks") to develop the "Greensward Plan" for Central Park.

ANSWER: Frederick Law Olmsted

[10] A park in downtown Columbus, Ohio contains a replica of Seurat's *Sunday Afternoon on the Island of La Grande Jatte* in this horticultural art form. The Guggenheim Bilbao is home to a huge puppy created by Jeff Koons in this art form.

ANSWER: topiary [prompt on "flowers" or "plants" or "hedges" or similar answers]

<Carson>

9. A September 1994 issue of the *American Economic Review* carried a landmark study by David Card and Alan Krueger on this topic. For 10 points each:

[10] Identify this legally mandated value, whose impact Card and Krueger analyzed by phoning hundreds of New Jersey and Pennsylvania restaurants.

ANSWER: minimum wage

[10] A writer who has cited that study is this Nobel laureate with a New York Times column.

ANSWER: Paul Krugman

[10] Republicans generally favor this program, which allows some poor workers to get a refund larger than their withholdings. Krugman argues that the amount of this benefit should be increased along with the minimum wage.

ANSWER: Earned Income Tax Credit [or EITC; or EIC]

<Reinstein>

10. Substances are classified by their retention factors when undergoing this procedure. For 10 points each:  
[10] Name this separation technique which uses a mobile phase and a stationary phase. Gas, liquid, and thin-layer are three common types of it.

ANSWER: **chromatography** [or word forms]

[10] After a sample has completely adsorbed to the stationary phase, this procedure is used to remove the remaining solute. In it, a solvent with higher affinity to the stationary phase is added, flushing out the remaining analytes.

ANSWER: **elution** [do not accept or prompt on "dilution"]

[10] In ion-exchange chromatography of proteins, elutions often make use of this effect, in which the solubility of a protein decreases as small ions are added to the solution.

ANSWER: **salting out** [do not accept or prompt on "salting in"]

<Silverman>

11. Answer these questions about the history of pre-modern astronomy, for 10 points each.

[10] This city's astronomers developed a theory of planetary motion during the Chaldean period. Astronomers' tables from here help us date the reign of its ruler Nebuchadnezzar II.

ANSWER: **Babylonia**

[10] This civilization's priest-astronomers focused on Venus and the rise of the Pleiades each April. Their base 20 numeral system, including zero, let them notate their Long Count calendar.

ANSWER: **Mayan** people [or **Quiché** Maya]

[10] This polymath at the Abbasid House of Wisdom wrote out tables for the planets in *Zij al-Sindhind*. He also wrote a book on solving for variables, whose *al-jabr* operation now names "algebra".

ANSWER: Muhammad ibn Musa **al-Khwarizmi** [or **Algorithmi**]

<Jackson>

12. This body of water is located south of the Kola Peninsula. For 10 points each:

[10] Name this inlet of the Arctic Ocean. A canal passing through Lake Onega connects this body of water to the Baltic Sea.

ANSWER: **White** Sea [or **Beloye** More; or **Beloje** More]

[10] The White Sea is home to a popularly hunted "harp" or "Greenland" kind of this pinniped. Its *Phoca sibirica* species, which is also endemic to Russia, is its only freshwater variety.

ANSWER: **seal**

[10] This Dvina river city is thirty miles from the White Sea. It was Russia's first west-facing port, and was built around the monastery of Michael.

ANSWER: **Arkhangelsk**

<Karas>

13. Psychologically, this character almost completely controls Billy Bibbit. For 10 points each:

[10] Name this character who precipitates Billy's suicide by threatening to tell his mother about his loss of virginity. This character is then attacked by a man who had earlier failed to lift a shower control panel.

ANSWER: Nurse **Ratched**

[10] Nurse Ratched is part of "the Combine," the antagonistic controlling forces described in this novel by its narrator Chief Bromden, who smothers Randle McMurphy at its end.

ANSWER: ***One Flew Over the Cuckoo's Nest***

[10] This author of *One Flew Over the Cuckoo's Nest* described the Stamper family's Oregon logging operation in *Sometimes a Great Notion*.

ANSWER: Ken **Kesey** [or Kenneth Elton **Kesey**]

<Mehigan>

14. Name some metabolic fates of tryptophan, for 10 points each:

[10] Tryptophan can be metabolized into this neurotransmitter by hydroxylating the phenyl group. This compound leads to feelings of well-being and is accordingly targeted by SSRIs.

ANSWER: **serotonin** [or **5-hydroxytryptamine**; or **5-HT**]

[10] This vitamin, consisting of a carboxyl group bonded to pyridine, can be synthesized from tryptophan. Though once administered to reduce patients' cholesterol levels, taking this vitamin in excess leads to flushing.

ANSWER: **niacin** [or Vitamin **B3**; or **nicotinic acid**; prompt on partial answer]

[10] The indole group from tryptophan can also be used to make these compounds. According to one hypothesis, these carboxylic acids lower the pH, causing expansins to loosen the cell wall, which in turn causes cells to expand.

ANSWER: **auxins**

<Silverman>

15. The first Euler angle, usually represented phi or alpha, represents the angle of this phenomenon, usually about the z-axis. For 10 points each:

[10] Identify this change in the axis of a rotating body. It is commonly observed in a spinning top along with a wobble in the axis.

ANSWER: **precession**

[10] The wobble in the rotational axis as a top - or other rotating object, such as the Earth - precesses is known by this term, which involves a change in the second Euler angle.

ANSWER: **nutation**

[10] This phenomenon occurs when two rotational axes of a three-dimensional system point in the same direction, leading to the loss of a degree of freedom. It's an intrinsic problem for the Euler angle representation.

ANSWER: **gimbal lock**

<Voight>

16. Mary and Earl Lyall satirized the participants in this event in a children's book called *The Cubies' ABC*. For 10 points each:

[10] Identify this controversial 1913 "International Exhibition of Modern Art" co-organized by Arthur Davies, Walter Pach and Walt Kuhn. It takes its name from the New York City building where the works were exhibited.

ANSWER: the **Armory Show**

[10] This artist's *The Centenary of the Revolution* was displayed at the Armory Show. This self-trained artist painted works like *The Luxembourg Gardens*, *Monument to Chopin* and one whose title figure rests next to a stringed instrument and a lion, *The Sleeping Gypsy*.

ANSWER: Henri **Rousseau** [or Henri Julien Félix **Rousseau**]

[10] This member of Die Brücke exhibited *Naked Playing People* at the Armory Show. He illustrated the novel *Peter Schlemihl's Wonderful Story* and depicted concave women in fur coats in *Street, Berlin*.

ANSWER: Ernst Ludwig **Kirchner**

<Bentley>

17. This man's son of the same name helped unite the colony of Connecticut and he himself delivered a sermon on "A Model of Christian Charity", likening his colony to "a City upon a Hill." For 10 points each: [10] Name this man who succeeded John Endecott in 1630, a frequent governor of the Massachusetts Bay Colony.

ANSWER: John **Winthrop**

[10] Winthrop secretly helped this man escape to found Rhode Island and Providence Plantations, despite disagreeing with this man's view that church and state should be separate.

ANSWER: Roger **Williams**

[10] Winthrop tried and expelled Anne Hutchinson for this heresy, the belief that a person who achieved salvation by faith alone is not bound to act under moral law.

ANSWER: **Antinomianism** [or **Antinomian** heresy; or **Antinomian** controversy]

<Bentley>

18. This poet is described in a newscast as "one oozy footprint behind" his contemporary Robert Frost. For 10 points each:

[10] Name this fictional poet whose neighbor and commentator may or may not be the exiled King of Zembla. This poet works at Wordsmith College in the Appalachian town of New Wye, and his magnum opus, which is missing its 1000th line, takes its title from *Timon of Athens*.

ANSWER: **John Shade** [accept either]

[10] John Shade appears in the novel *Pale Fire*, which was written by this Russian-American author and lepidoptery-enthusiast, who is most famous for *Lolita*, his tale of the nymphet-obsessed Humbert Humbert.

ANSWER: Vladimir Vladimirovich **Nabokov**

[10] In 1958, Nabokov and his son Dmitri produced an English translation of *A Hero of Our Time*, a novel about the Byronic hero Pechorin written by this Russian author, who died in a duel in 1841.

ANSWER: Mikhail Yuryevich **Lermontov**

<Carson>

19. Keys that are separated by a tritone are located directly opposite each other on this diagram. For 10 points each:

[10] Name this graphical diagram which organizes the 12 major and 12 minor keys in the shape of a clock, in order of how many sharps or flats they have.

ANSWER: the **circle of fifths** [or **circle of fourths**; prompt on "circle of keys"]

[10] Moving one step counterclockwise around the circle of fifths will take you to a key that has this relation to the one you started with. The fourth degree of a major or minor scale is also given this name.

ANSWER: **subdominant** [do not accept or prompt on "dominant"]

[10] Keys like A-flat minor and G-sharp minor, which sound the same but are spelled differently, are said to have this relationship.

ANSWER: **enharmonic** [or **enharmonicity**; or other word forms]

<Rosenberg>

20. One of these gods gave the first humans wit, while the other gave them speech and sight. For 10 points each:

[10] Name these two sons of Borr who help their brother kill a primordial frost giant.

ANSWER: **Vili** and **Ve** [prompt if only one is given; accept in either order]

[10] Vili and Ve helped their brother Odin kill this frost giant from Norse mythology.

ANSWER: **Ymir**

[10] Loki accused this wife of Odin of carrying on an affair with Odin's brothers.

ANSWER: **Frigga**

<Naveh-Benjamin>

21. This virus' genome encodes proteins like *tat* and *gag*. For 10 points each:

[10] Name this virus which causes AIDS.

ANSWER: **HIV** [or **human immunodeficiency** virus]

[10] In HIV, p24 is a component of this protein shell of a virus, which is sometimes surrounded by the viral envelope. They're often icosahedral in shape.

ANSWER: **capsids**

[10] Like other lentiviruses, HIV encodes a protein called *tat*, which is this type of "activator of transcription." This prefix describes regulatory elements which are *not* located on the same strand of DNA as the gene they're regulating.

ANSWER: **trans** [or **trans**-regulatory elements; or **trans**activator of transcription]

<Silverman>

22. Answer these questions about European crusades against Baltic paganism, for 10 points each.

[10] This group of Germanic knights, founded during the Third Crusade, launched several crusades against Lithuanian pagans. They were defeated at the first battle of Grunwald, or Tannenberg.

ANSWER: **Teutonic** Knights [or **Teutonic** Order; or **Order of Brothers** of the German House of Saint Mary in Jerusalem; or **Deutscher** Ritter-Orden; do not accept or prompt on "Knights Hospitallers"]

[10] This English king joined the Teutonic Knights on an anti-Lithuanian crusade after upsetting and replacing Richard II. He ruled during Harry Hotspur's rebellion.

ANSWER: **Henry IV** [or **Henry Bolingbroke**]

[10] During the crusade of this number, Pope Eugenius III let Saxons fight a set of Slavic pagans called Wends rather than march to the Holy Land in this crusade. Louis VII of France fought in this crusade.

ANSWER: **Second** Crusade [or **2**]

<Bentley>

23. Identify the following about literary works that have been adapted into films directed by Luchino Visconti, for 10 points each.

[10] Marcello Mastroianni starred in the 1967 adaptation of this Albert Camus novel, in which Meursault acts apathetic at his mother's funeral and, several days later, shoots an Arab man on the beach.

ANSWER: *The **Stranger*** [or *L'**Etranger***; or *The **Outsider***; or *Lo **Straniero***]

[10] Mastroianni also starred in Visconti's adaptation of "White Nights", a story by this Russian author of "The Dream of a Ridiculous Man" and the novels *Demons* and *The Gambler*.

ANSWER: Fyodor Mikhailovich **Dostoevsky** [or Fyodor **Dostoyevsky**]

[10] Alain Delon and Burt Lancaster played Tancredi Falconeri and Don Fabrizio, respectively, in the Visconti film based on this novel about Risorgimento-era Sicily by Giuseppe Tomasi di Lampedusa.

ANSWER: *The **Leopard*** [or *Il **Gattopardo***]

<Carson>