



ACADEMIC COMPETITION FEDERATION

2014 ACF NATIONALS
PACKET 2 BY THE EDITORS

TOSSUPS

1. A legend says that the army retreating from this battle left behind several sacks of green coffee beans, which were planted by locals, leading to the region's booming coffee trade. Allegedly, a bomb planted in the Lobelbastei complex at this battle was defused at the last minute when a subterranean cavern was discovered. In its aftermath, the winning commander wrote "I came, I saw, God conquered" in a letter to Pope Innocent XI. Initial resistance in this battle was provided by Ernst von Starhemberg, who was aided by a victory of Charles V, Duke of Lorraine in the north. The losing commander here was strangled by a silk cord in Belgrade and had his head placed in a velvet bag, just a year after his emperor Mehmed IV boasted that he would decapitate Leopold I after winning this battle. A charge of winged hussars here turned the tide against the forces of Kara Mustafa. For 10 points, name this failed Ottoman offensive in 1683 which was rebuffed by Jan III Sobieski.

ANSWER: Ottoman SIEGE OF VIENNA in 1683 [or Battle of VIENNA]

2. Several studies link the formation of beta amyloid plaques in Alzheimer's disease to mammalian target of rapamycin's negative regulation of this process. Experiments increasing the level of Beclin1 expression in mice, thus positively regulating this process, provide proof of this process's role in tumor suppression. Cvt targeting in yeast uses this process, which is initiated by the ULK1 kinase complex. Evidence for this process can be confirmed visually by dot-like or ring-like patterns in immunofluorescent stains of LC3, a homolog of the critical Atg markers. The "micro" form of this process is direct, whereas the "macro" form, which is canonically induced by stress or starvation, results in the formation of a double-membrane organelle around the target cytoplasmic components. For 10 points, name this process in which lysosomes are fused to degraded cell parts, thus allowing the cell to "eat itself."

ANSWER: AUTOPHAGY

3. One character in this story boasts about describing an Australian region with the brilliant line of poetry, "Yawns a bored skeleton — Color? Sky-pearly." A postscript in this story mentions a manuscript by the Brazilian consul Captain Burton that discusses a mirror owned by Alexander the Great. One character in this story rants against the obsession with literary prologues, an attitude he calls "prologomania," before asking the narrator to recommend someone to write a "foreword" for his poetry collection aiming to versify every terrestrial feature of the planet, titled *The Earth*. The narrator of this story visits a house every April 30th on Calle Garay after the death of Beatriz Viterbo. At the end of this story Zunni tries to stop the landlords Zunino and Zungri from tearing down a house where Carlos Argentino Daneri shows the narrator the title object at the nineteenth step down to the basement. For 10 points, name this 1945 short story titled for a symbol of infinity where one can see every point in the universe, written by Jorge Luis Borges.

ANSWER: "El ALEPH" [or "The ALEPH"]

4. A notable scene in this work shows a figure sitting at a banquet table next to an usher with the words "aproche, aproche" inscribed above his head meaning "approach, approach," which refers to the feast's function as the principal day of gift giving. In this work's third scene, a dragon flying toward a castle references a local legend about a fairy's daughter who married a lord and would flee as a dragon if he tried to visit her on Saturday. An image of a man gathering "throwing sticks" for the annual acorn harvest to feed his pigs was the only primary section of this work executed by Jean Colombe, while one part was finished by a man known as the Master of the Shadows. The god Phoebus appears riding his chariot as a recurring motif in the inner field of an arch, consisting of four concentric semi-circles, that appears across the top of twelve sections in this work, which are decorated with zodiac signs on a blue background to correspond to the months of the year. For 10 points, name this Gothic illuminated manuscript commissioned by the Duke of Berry from the Limbourg brothers.

ANSWER: TRÉS RICHES HEURES du Duc de Berry or The RICH HOURS of the Duke of Berry [prompt on The BOOK OF HOURS]

5. A story says that this man's teacher told him about a weapon to prepare for any battle, and then took him to a house of books to show the value of knowledge over violence. Early on, he studied in Basra under Muhammad Majmu'i, but they were both driven out of town, and wandered the desert together for days. The first chronicle of this man's life was composed by Husayn Ibn Ghannam, and a book refuting his ideas was composed by his brother Sulayman. In his hometown of Uyaynah, he gained the favor of a ruler named Uthman, whom he directed to begin a campaign of iconoclasm, destroying the domes on the gravesites of Muhammad's companion. This man was then invited to settle in Diriyah, where he formed a pact to promote a type of Salafi teaching inspired by the medieval writings of Ibn Taymiyyah, preaching against all forms of bid'a and shirk. For 10 points, name this man who founded an eponymous branch of conservative Islam in the Hijaz region, after he formed an alliance with Ibn Saud.

ANSWER: Muhammad ibn Abd al-WAHHAB [or the Shaykh Muhammad ibn Abd al-WAHHAB ibn Sulayman ibn Ali ibn Muhammad ibn Ahmad ibn Rashid al Tamimi]

6. Because semicarbazones have sharp, characteristic values for this property, they can be useful in identifying parent ketones or aldehydes. This property is linked to root mean squared vibration amplitude exceeding 10% of the nearest neighbor distance according to Lindemann's criterion for crystals. It's not related to size, but the fact that gold nanoparticles have a markedly lower value for this property than gold slabs is an unexplained phenomenon in nanochemistry. This property is often measured by a procedure in which a sample is packed into a capillary tube and observed in a metal block through a magnifying glass, though simpler procedures use the Kofler bench and Thiele tube. This property is directly proportional to the increasing branched-ness of isomers of organic compounds, an observation that is often explained by noting that symmetric compounds are easier to stack. An alloy displays a singular value, rather than a range, for this property at the eutectic point. This property governs when the enthalpy of a substance changes due to fusion. For 10 points, name this property, the temperature at which a solid becomes a liquid.

ANSWER: MELTING POINT [or MELTING TEMPERATURE; grudgingly accept FREEZING POINT and FREEZING TEMPERATURE, even though they're not always exactly the same; accept FUSION POINT or FUSION TEMPERATURE before "fusion" is read; accept MELTING or FUSION after point is read]

7. This ruler provided asylum to Alcetas of Epirus, whom he tried to install as king, but his designs were thwarted when the Spartan king Agesilaus provided aid to the Molossians. He built a stone prison called the Lautumiae, and allegedly locked up the poet Philoxenus there. That may have happened because Philoxenus ridiculed this ruler's play, titled *The Ransom of Hector*, which won first prize at the Olympics. A no-longer extant biography of him was written by his court historian Philistus. His son and successor accepted the offer of the general Timoleon to give up the throne in return for safe passage to Corinth. This man set up a fortress on the island of Ortygia after enslaving the people of Rhegium and fighting a war with Carthage, after which he began his rule as tyrant. For 10 points, name this tyrant of Syracuse known as the "Elder," who was succeeded in Sicily by a son of the same name called the "Younger."

ANSWER: DIONYSIUS of Syracuse [accept just DIONYSIUS; or DIONYSIUS I; or DIONYSIUS THE ELDER]

8. A character in this novel observes a flock of rooks unsure about which tree to settle on, and bestows the names "Joseph" and "Mary" on their patriarch and its mate. Frequent references are made to the "little Chinese eyes" of another character, who at the end of this novel remarks: "I have my vision." This novel depicts a boy cutting a square out of a fish before throwing its living body back into the sea in a two-sentence chapter in brackets. Another character in this novel wraps her shawl around a boar's skull and reads the story of "The Fisherman and His Wife" at different times to assuage her children. In this novel's second section, a description of a storm assailing a dilapidated house maintained by Mrs. McNab is interjected with parenthetical descriptions of the deaths of Andrew and Prue. In this novel's first section Paul Rayley proposes to Minta Doyle at a party hosted on the Isle of Skye. For 10 points, name this novel that ends when Lily Briscoe finally completes her portrait of Mrs. Ramsay, written by Virginia Woolf.

ANSWER: TO THE LIGHTHOUSE

9. In an oratorio by this composer that lay undiscovered in the British Library for a century, the Destroying Angel concludes

an act whose highlight is the duet between Aaron and Moses. A movement called *La seccatura*, meaning “the annoyance,” appears in his clarinet quartet, where each part plays a different time signature. This composer of the *Parting of the Red Sea* included a “Rondo pastorale” finale in his violin sonata, which has a comparably popular flute edition. Schubert composed his *Trout Quintet* for an ensemble that got tired of playing this man’s piano quintet. He demonstrated principles from his treatise on the art of piano playing in his back to back A minor and B minor piano concerti. This man’s most recorded work was the second concerto commissioned by Anton Weidinger for his new keyed instrument, and he was the second Konzertmaster to Prince Esterhazy; his precursor in both cases was Haydn. For 10 points, name this Austrian composer, a protégé of Mozart who composed an E major *Trumpet Concerto*.

ANSWER: Johann Nepomuk HUMMEL

10. In one work, this thinker posits that the four main phases of public action are breach, crisis, redressive action, and reintegration. After his death, his wife published a monograph on the healing practices of the Iñupiat tribe of Alaskan eskimos, entitled *The Hands Feel It*. In an essay, he draws a distinction between “Taxonomy Versus Dynamics” while analyzing “witchcraft and sorcery,” and in another essay, he chronicles his time spent with a doctor called Muchona the Hornet, who this thinker called an “Interpreter of Religion.” In his book *Dramas, Fields, and Metaphors*, this student of Max Gluckman coined the term “communitas” to refer to a fusion of individuals into a collective identity. He’s remembered for studying the Ndembu tribe and for writing a chapter entitled “Betwixt and Between,” which draws upon the work of Arnold van Gennep to describe a kind of cultural event. For 10 points, name this British anthropologist who developed the concept of liminality in his book *The Forest of Symbols*, wherein he studied rites of passage.

ANSWER: Victor Witter TURNER

11. A group of freedom fighters from this modern-day country were named for the offspring of a monkey and a buzzard, and one of them known as the “Bronze Titan” was appointed “collector of funds” and charged with drumming up international support. Those rebels, known as “Los Mambises,” included men like Calixto Garcia, whose uprising in this country, known as the Little War, was quickly quashed. A conference called the “Protest at Baragua” was called together in this country by rebel leader Antonio Maceo, who rejected the concessions made at the Pact of Zanjón. Its independence fighters put forth the “10th of October Manifesto” and the “Cry of Yara” at the opening of another conflict, during which Valeriano “Butcher” Weyler carried out his first repressive campaign. For 10 points, name this country, the site of the Ten Years War, which boasted national heroes such as Jose Martí.

ANSWER: Republic of CUBA [or Republica de CUBA]

12. The speaker of this poem notes “here they’ve cats, not cobras, to / keep down the rats” after explaining that “the climate is not right for the banyan, frangipani, or jack-fruit trees.” Its speaker mentions “the college student / named Ambrose [who] sits on the hillside / with his not-native books . . . liking an elegance of which the source is not bravado.” This poem was published with companion poems titled “The Hero” and “The Student,” referring to the penultimate stanza where the speaker explains “the hero, the student” and the title person “each in his way, is at home” in the town “with eight stranded whales to look at,” which the speaker surveys before declaring — in a phrase cited as the poet’s credo — “it is a privilege to see so much confusion.” The title character of this poem “might be part of a novel,” and a sidewalk sign identifies him as “C. J. Poole” as he ironically hangs a “Danger” sign on the spire of a church. This poem begins with the line, “Durer would have seen a reason for living / in a town like this.” For 10 points, name this Marianne Moore poem titled for a church repairman.

ANSWER: “The STEEPLE JACK”

13. The basic equation describing these phenomena is called the meridional structure equation, which is sometimes also named for Laplace, who first derived it. A Fourier-series expansion of the potential that drives these phenomena was performed by Doodson, whose namesake numbers index the constituent parts of these phenomena into groups with similar frequencies and spatial variability. These phenomena account for a corresponding energy dissipation of about 3.75 terawatts and a lengthening of the day by about 2 milliseconds per century, and locations where the vertical components of these phenomena are absent are called amphidromic points. In shallow waters, the amplitude of these phenomena is calculated either from the Doodson frequencies or via Munk and Cartwright’s “response method.” For 10 points, identify these phenomena resulting from the differential gravitational influence of one celestial body on the surface of another, such as that of the moon on Earth, which drives oceanic motion.

ANSWER: TIDES [accept equivalents, e.g. TIDAL FORCES]

14. This woman manages to protect her sons by having them switch their mourning clothes with white robes, resulting in soldiers slaughtering her rival Themisto's twins instead of hers. This woman gives a stranded Odysseus an enchanted veil to protect him from harm and instructs him to toss the garment as far as he can into the sea after reaching land. Because of this woman's short stint as the caretaker of her nephew Dionysus, Hera jealously inflicts her husband with madness, causing her to escape and plunge into the sea with her son Melicertes, after which she is reborn as the goddess Leucothea. This sister of Semele sets one plan in motion by rendering fallow the seed-corn fields of Boeotia, then bribing the local farmers to lie that the Oracle's solution to avert famine requires the sacrifice of a child. This plan is thwarted when Nephele, the first wife of this woman's husband Athamas, sends a golden ram to rescue her children. For 10 points, name this queen of Thebes, the wicked stepmother of Phrixus and Helle.

ANSWER: INO [or LEUCOTHEA before mentioned]

15. A leading proponent of this cause in Latin America was Mariano Paz Soldan, who made a visit to the United States to study this subject, and worked with Maximilano Mimesy in Lima, Peru to develop his ideas. It was championed in England by Sir George Paul, who used a report by John Howard to secure passage of the Gloucestershire Act in hopes of furthering his ideas. This was the primary cause fought for by Elizabeth Gurney Fry, the Quaker wife of a London merchant, who was one of several speakers on this cause who favored the Auburn System over the so-called Pennsylvania System. Fry presented evidence to a Parliamentary Committee in 1818 on this subject. Another champion of this cause inspired the Presidio Modelo complex by writing about his ideal model, called the Panopticon. For 10 points, name this cause which sought to improve conditions at places like Pentonville, Newgate, and Leavenworth.

ANSWER: PRISON REFORM [accept any answer which implies the cause of "IMPROVING CONDITIONS IN PRISONS or JAILS or so forth" or "BUILDING/CREATING BETTER PRISONS", etc.]

16. A critique of this concept's popularizer which itself is named after this concept was written by Max Scheler, who argued that the thinker who popularized this concept applied it inappropriately. This concept, if it appears in a noble man, does not "poison" him because it "consummates and exhausts itself in an immediate reaction," according to another work. Another work by this concept's originator argues that though this concept is "born of weakness," it is "most harmful for the weak themselves," and attributes the author's freedom from this concept to a "protracted sickness." The work which most famously discusses this concept calls it the "inversion of the value-positing eye" and that when it "becomes creative and gives birth to values," it brings about "the slave revolt in morality." For 10 points, identify this concept extensively discussed by Nietzsche in both *Ecce Homo* and *On the Genealogy of Morals*, a French word signifying the envy and hatred of the weak for the strong that results in the creation of the concept of evil.

ANSWER: RESSENTIMENT [do not accept "resentment," the French pronunciation is required, as it is a technical term]

17. This man argued for free silver in his book *Eight Discourses on the Gold Standard and Other Kindred Subjects* and lamented that "rubber credit money" was being extended by an evil force he often referred to as "international bankers." This man never held political office, but he and his political buddies led Hugh Johnson to coin the term "lunatic fringe." When invited by Hamilton Fish to testify before the House on communism, he referred to it as a "Red Fog." Along with Gerald Smith and Francis Townsend, he founded a political party which he supported in his newspaper *Social Justice*, which ran North Dakota congressman William Lemke as its only candidate. This founder of the Union Party spent the majority of his career in Royal Oak, Michigan under authority of Michael Gallagher at the Shrine of the Little Flower, where he created a program called the Golden Hour. For 10 points, name this Catholic radio priest popular in pre-World War II America.

ANSWER: Father Charles Edward COUGHLIN

18. This author introduced the maxim "the spirits that I called" as an expression for using powers you can't control, and he wrote the play that popularized the saying "kiss my ass," which became so famous that it was dubbed the Swabian salute. This author's best-known play begins with a character struggling to translate the word "logos" from the Gospel of John, and that play gave rise to an expression meaning the gist of the matter that literally translates as "the core of the poodle." In another play by him, the aesthetic credo "heavenly joy, deadly sorrow" appears in a ballad sung by the title count's evil mistress Klarchen. This author of *Götz von Berlichingen* and *Egmont* wrote a play that ends when the Mater Gloriosa descends from heaven to save the soul of the man who tried to rescue Gretchen from jail after she was imprisoned for drowning her child. For 10 points,

name this German dramatist who wrote about Mephistopheles tempting the title scholar in *Faust*.

ANSWER: Johann Wolfgang von GOETHE

19. The Bennett pinch is the simplest non-trivial equilibrium derivable from this formalism, and when axial symmetry is present, a general equilibrium is found by numerically solving the Grad-Shafranov equation. Under this formalism, when the E-cross-B drift dominates and the medium under analysis contains particles undergoing gyromotion, the ideal Ohm's Law can be derived. This formalism is used to derive the existence of transversely propagating incompressible Alfvén waves in the medium being analyzed. This formalism adds a term equal to the cross product of the current with the magnetic field to the ordinary fluid equation of motion, and is generally less accurate but more tractable than the Vlasov formalism. For 10 points, identify this theoretical framework which treats plasma interacting with a magnetic field as a continuous fluid medium.

ANSWER: Magnetohydrodynamics

20. This place's highest point is a short stone tower modeled on prehistoric megaliths called "talayots," which is topped by three stone crucifixes. One section of this place has a stone portico shaped like a wave, which is supported by slanting columns decorated with a recurring carving of a washerwoman that lead the path to be called the Washerwoman Portico. This place includes a cave dubbed "The Grotto of the Elephant," and it has three viaducts with columns designed to resemble pine trees and bird nests. It was originally built on a hill called Bare Mountain as part of a failed housing complex. An undulating bench shaped like a snake at this location wraps around an elevated, sand-filled plaza, which stands on a terrace supported by a porch of eighty-six Doric columns called the Sala Hipostila. This park makes extensive use of a craft using broken ceramic called "trencadis," mastered by Josep Maria Jujol, who created the colorful mosaic lizard called "the dragon" that stands at this park's main staircase as a symbol of Catalan nationalism. For 10 points, name this park in Barcelona designed by Gaudí.

ANSWER: Park GUÉLL

TIEBREAKER

21. The dye bromsulphthalein is commonly used to assess the function of this organ, since it is transported by the OATP family of membrane proteins. The etiology of a well-known disease affecting this organ is the same as that for a "silent" condition abbreviated NASH. Substances demonstrating the first-pass effect have their concentrations greatly diminished by the time they enter this organ. The polyhedral-shaped cells of this organ secrete substances that are collected by canaliculi. This organ is the main site of synthesis of transferrin, which has very high affinity for iron-III. This organ secretes the majority of angiotensinogen, which is the precursor to angiotensin, as well as the bulk of the most abundant protein in the blood plasma. In this organ, glucuronic acid is added to a substance produced here, which is responsible for the color of bruises and feces. This organ thus completes the catabolism of heme begun by the spleen. For 10 points, name this organ from which bilirubin is excreted via bile.

ANSWER: LIVER

BONUSES

1. In the 1963 paper “What we can do,” written with Sydney Morgenbesser, Arthur Danto analyzed what he termed the “basic” form of this phenomenon by considering the possibility of raising one’s hat. For 10 points each:

[10] Identify this concept underpinning a namesake subfield of philosophy that is primarily concerned with the nature of willed movements.

ANSWER: ACTION

[10] In a paper titled “Actions, Reasons, and Causes,” and submitted to the same symposium as the Danto and Morgenbesser paper, this philosopher argued that the primary reason for an action was its cause. You may know him better for coining the concept of anomalous monism in his seminal paper “Mental Events.”

ANSWER: Donald DAVIDSON

[10] Davidson’s view that actions were events and that events were ontologically irreducible ran contrary to the view of this philosopher that events are property exemplifications, as outlined in his appropriately-titled “Events as Property Exemplifications.” He is best known for his work on supervenience in such works as *Supervenience and Mind*.

ANSWER: Jaegwon KIM

2. The “dear, dear Friend” mentioned in this poem is the poet’s sister Dorothy. For 10 points each:

[10] Name this Wordsworth poem in which the speaker proclaims he is a “worshipper of Nature” after revisiting the River Wye for the first time in five years.

ANSWER: “Lines composed a few miles above TINTERN ABBEY”

[10] At the end of “Tintern Abbey” the speaker describes a time in the future after “these wild ecstasies shall be matured into a sober pleasure,” when “thy mind” shall become a figurative type of this building “for all lovely forms.”

ANSWER: a MANSION

[10] In the second stanza of the poem, the speaker describes how the location inspired “that blessed mood” when “with an eye made quiet by the power of harmony” we can “see” into an entity, described with this three-word phrase that ends the last line of the second stanza.

ANSWER: “the LIFE OF THINGS”

3. Wayne Shorter included an arrangement of this classical piece on his album *The Soothsayer*. For 10 points each:

[10] Identify this concert piece evoking a sick mother arising from her deathbed to dance with ghostly couples. It was originally part of the incidental music the composer wrote for his brother-in-law’s play *Death*.

ANSWER: VALSE TRISTE

[10] *Valse triste* is a well-known non-symphonic piece by this Finnish composer, who wrote the nationalistic brass-heavy composition *Finlandia*.

ANSWER: Jean SIBELIUS [or Johan Julius Christian SIBELIUS]

[10] This lively third movement from Sibelius’s *Karelia Suite* was originally the intermezzo preceding a tableau depicting a castle siege.

ANSWER: ALLA MARCIA [accept MARCH]

4. For a function u , this partial differential equation is given by the time derivative of u , plus a constant α times u times the first spatial derivative of u , plus the third spatial derivative of u , equals zero. For 10 points each:

[10] Identify this PDE which models a wave propagating in shallow water.

ANSWER: KORTEWEG-DE VRIES equation

[10] The Korteweg-de Vries equation describes this type of nonlinear isolated coherently propagating wave which obeys the superposition principle.

ANSWER: SOLITON

[10] The Korteweg-de Vries equation is encountered as the limiting continuum case of the one dimensional lattice used in this famous numerical computing experiment, in which three Los Alamos researchers demonstrated quasiperiodic behavior in a coupled nonlinear system of oscillators.

ANSWER: FERMI-PASTA-ULAM experiment [accept FPU]

5. Answer the following about historically epic European parties, for 10 points each.

[10] Disaster struck during the reign of Charles VI of France when the king's oafish brother Louis of Valois showed up to this party held to celebrate the wedding of the Queen's lady in 1393. This event was depicted and illustrated in the Chronicles of Jean Froissart.

ANSWER: BAL DES ARDENTS [or BALL OF THE BURNING MEN or other very close translations; or BAL DES SAUVAGES, or the BALL OF SAVAGES; or the BALL OF THE WILD MEN and very close translations]

[10] A moonlight picnic with male dancers and the sodomization of a swan may have happened on any given night at the castle Neuschwanstein, built by this reputedly mad German king who patronized Richard Wagner.

ANSWER: LUDWIG II of Bavaria [prompt on "Ludwig"]

[10] Cesare Borgia put on this fete for Pope Alexander VI in the Apostolic Palace, which involved fifty dancing prostitutes. Johannes Burchard witnessed this orgy, in which prizes such as silk shoes were handed out to those who ejaculated most frequently.

ANSWER: BANQUET OF CHESTNUTS [or the BALLET OF CHESTNUTS]

6. The wolflike counterparts to these warriors were known as Ulfhednar, though the jury's out on whether they, like these guys, consumed drugged food to dull their senses. For 10 points each:

[10] Name these terrifying warriors from Norse mythology who bit their shields and entered a trance-like fury in combat, a phenomenon which inspired an English word.

ANSWER: BERSERKERS [or BERSERKS]

[10] Twelve berserkers were the chosen champions of this legendary Danish king, a leader of the Scyldings clan who exacted revenge on the Swedish king Eadgils by slicing his back with the mighty sword Skofnung.

ANSWER: HROLF KRAKI [accept either name; also accept HRODULF; or ROLFO; or ROLUO; or KRAGE]

[10] Berserkers are loyal to Odin, who also commands this band of dead warriors who live it up in Valhalla, where they eat the meat of a regenerating animal and consume endless flagons of mead.

ANSWER: EINHERJAR

7. This article marvels at the "ability of the human mind to form a string of 1000 conclusions and still remain 'right,' " but mentions that we can get so caught up in not knowing the limitations of empirical laws that we lose sight of the "ultimate truth." For 10 points each:

[10] Name this 1960 paper which argues that the structures and equations underpinning theories often lead to further advances in those theories.

ANSWER: "The UNREASONABLE EFFECTIVENESS OF MATHEMATICS IN THE NATURAL SCIENCES"

[10] This intermittent physics professor at Princeton published "The Unreasonable Effectiveness of Mathematics in the Natural Sciences." He's the alphabetically-later co-namesake of a theorem stating that matrix elements of spherical tensor operators can be expressed as a product of two co-factors, one of which is a Clebsch-Gordan coefficient.

ANSWER: Eugene Paul WIGNER

[10] Wigner came up with the Wigner's friend thought experiment, which extends this famous illustration of the Copenhagen interpretation, in which the namesake animal in a box is both alive and dead.

ANSWER: SCHRODINGER'S CAT

8. This story ends with a passage that adopts the perspective of the title character's corpse as it sinks into the ocean and is ripped apart by a school of fish and a shark. For 10 points each:

[10] Name this story in which the title soldier lays dying in a ship's sick bay while his optimistic views are lampooned by the intellectual Pavel Ivanitch.

ANSWER: "GUSEV"

[10] This Russian author of "Gusev" also wrote the stories "The Lady with the Little Dog" and "The Black Monk."

ANSWER: Anton CHEKHOV

[10] In this story, Ivan and Burkin visit Aliokhin's estate, where they hear about Aliokhin's miserly brother Nikolai, who retired to the country and obsessively grew a single crop that ultimately tasted bitter.

ANSWER: "GOOSEBERRIES"

9. This mentally ill emperor addressed the Diet of Japan in 1913 by rolling up his printed speech and staring at the attendees

like he was looking through a telescope. He also kept a flock of carrier pigeons around during the Great Kanto Earthquake of 1923. For 10 points each:

[10] Name this emperor who ruled Japan from 1912 through 1926, and gives his name to that period.

ANSWER: Emperor TAISHO [also accept YOSHIHITO]

[10] Prior to becoming emperor, Taisho was on hand to greet this squadron of American ships when it docked at Yokohama in 1908 under orders of Theodore Roosevelt.

ANSWER: GREAT WHITE FLEET

[10] Taisho was mentored by this first prime minister of Japan, who was assassinated in 1909 by a Korean nationalist at Harbin Railway Station, an act which some believe caused Taisho to go insane.

ANSWER: Ito HIROBUMI [or HIROFUMI; or HAKUBUN; or SHUNSUKE]

10. This three-dimensional structure is similar to the one exhibited by phycocyanin, an accessory protein to chlorophyll. For 10 points each:

[10] Identify this common fold consisting of eight alpha helices, which in one protein is compromised by the mutation of a glutamate to a valine.

ANSWER: GLOBIN fold [don't accept "hemoglobin"]

[10] Really long loop regions, eight alpha helices, and eight parallel, alternating, beta strands characterize this other conserved protein fold, named for an enzyme important to glycolysis.

ANSWER: TIM BARREL [or TRIOSEPHOSPHATE ISOMERASE BARREL; prompt on "alpha-beta barrel"; be nice and prompt on "triosephosphate isomerase" and "TIM"]

[10] The core of the TIM barrel, and a patch caused by the mutation responsible for sickle cell anemia, are both packed with amino acids with this property, often possessed by non-polar substances, causing them to repel water.

ANSWER: HYDROPHOBIC [accept word forms]

11. One manuscript states that the Indian king Charkrawati Farman converted to Islam upon witnessing this event, and then shortly after, he died at the port of Zafar. For 10 points each:

[10] Name this miracle attested in Sura 54 of the Quran, which says that some folks witnessed this event and called it "transient magic." Later sources say it was performed by Muhammad to attest to his prophecy.

ANSWER: the SPLITTING OF THE MOON [accept equivalent answers suggesting that the MOON BREAKING APART]

[10] Early sources say the moon was split by God to gain the allegiance of the Quraysh tribe, of which Muhammad and the rightly-guided caliphs were members. The term Quraysh literally translates as this animal, which is believed to have served as the symbol on the official emblem of the Quraysh.

ANSWER: SHARK [also accept SELACHIMORPHA and SELACHII from people who insist on answering that way]

[10] The moon splitting miracle appears in these collections of sayings attributed to Muhammad, including the authentic version compiled by al-Bukhari.

ANSWER: HADITH

12. This two-word phrase was coined by Edmund Burke in his "Speech for the Conciliation with the Colonies." For 10 points each:

[10] Name this phrase often used to describe Prime Minister Robert Walpole's unofficial policy of declining to enforce strict Parliamentary laws on the American colonies, such as trade and religion laws, so as to allow the colonies to flourish.

ANSWER: "SALUTARY NEGLECT"

[10] An oft-cited example of salutary neglect is the growing power of this legislative assembly, which first met in 1619 in Jamestown under Virginia governor George Yeardley.

ANSWER: HOUSE OF BURGESSES

[10] The royal governor of Virginia, Alexander Spotswood, hated the idea of salutary neglect and frequently clashed with this member of the Virginia Governors Council. This Scottish missionary formulated a 1699 plan to reform clergy in Virginia, but may be best known for founding the College of William and Mary.

ANSWER: James BLAIR

13. This process occurs when initial density perturbations in the matter distribution grow linearly and break away from the Hubble flow, collapsing into clouds of virialized gas. For 10 points each:

[10] Identify this process whose resulting objects are classified along the Hubble fork diagram according to their morphological features.

ANSWER: GALAXY FORMATION [prompt on “structure formation”]

[10] Linear growth theory was used to derive this heuristic model of galaxy formation which relates the galactic halo mass to a function of the redshift.

ANSWER: PRESS-SCHECHTER formalism

[10] These types of galaxies, which lie at the root of the tuning fork diagram, are hypothesized to form from either monolithic collapse or from the mergers of spiral galaxies.

ANSWER: ELLIPTICAL galaxies

14. This essay begins with the narrator describing how his father died hours before his father’s ninth and final child was born. For 10 points each:

[10] Name this essay in which the narrator describes an apocalyptic race riot that broke out in Harlem the day of his father’s funeral, and concludes with the narrator declaring he must rid his heart of hatred before fighting racial injustice.

ANSWER: “NOTES OF A NATIVE SON”

[10] This author discussed the experience of having a preacher as a father in “Notes of a Native Son,” and had early fictionalized his upbringing in his novel *Go Tell It on the Mountain*.

ANSWER: James BALDWIN

[10] The best-known essay in *Notes of a Native Son* is probably this piece that viciously attacks *Uncle Tom’s Cabin* and offers a critique of Richard Wright’s *Native Son* continued in the next essay “Many Thousands Gone”.

ANSWER: “EVERYBODY’S PROTEST NOVEL”

15. Canadians are all about communication. Name these reasons why, For 10 points each.

[10] This Canadian thinker developed a bunch of communication theories in works like *Empire and Communications* and *The Bias of Communication*, including his study of ancient Egypt which traced its waxing and waning power to monopolies on the means of communication.

ANSWER: Harold Adams INNIS

[10] This more famous Canadian expert on communication wrote about the global village, and about the medium being the message, in works like *The Gutenberg Galaxy*.

ANSWER: [Herbert] Marshall MCLUHAN

[10] In his work *The Fur Trade in Canada*, Harold Innis put forth this thesis of economic development which has also been supported by W.A. Mackintosh and Mel Watkins. It states that exportation of raw materials including fish and wheat allowed Canada to both diversify and develop.

ANSWER: STAPLES thesis [or STAPLE thesis]

16. This museum displays specially commissioned artworks in its massive Turbine Hall, which was the original venue for Anish Kapoor’s installation sculpture *Marsyas*. For 10 points each:

[10] Name this museum housed in a refurbished power station, whose permanent collection includes Lichtenstein’s *Whaam!* and Dali’s *Metamorphoses of Narcissus*.

ANSWER: TATE MODERN

[10] The Tate Modern cemented its status as the second most visited museum in the world, after the Louvre, with its record-breaking retrospective dedicated to this leader of the Young British Artists, which included his diamond-studded skull *For the Love of God*.

ANSWER: Damien HIRST

[10] The Tate Modern also owns this Max Ernst painting based on a photo of a Sudanese corn-bin, which shows a headless mannequin wearing a surgical glove in front of a massive round mechanical creature.

ANSWER: CELEBES [or The ELEPHANT CELEBES]

17. This author based the novel *The Secret City* on his experiences covering the Russian Revolution as a newspaper correspondent. For 10 points each:

[10] Name this British author who wrote about a scamp who sells his mistress at a county fair to win the love of a gypsy woman in *Rogue Herries*, the first volume of his historical *Herries Chronicle* series.

ANSWER: Hugh WALPOLE

[10] Hugh Walpole's reputation was tarnished when he was caricatured as the talentless novelist Alroy Kear in this 1930 novel, in which Kear is approached by Mrs. Driffield to write a biography of her deceased husband Edward Driffield, who may have been modeled on Thomas Hardy.

ANSWER: CAKES AND ALE; or, the Skeleton in the Cupboard

[10] Though British, Walpole was born in New Zealand, like this other author who wrote about Laura delivering leftovers to the house of the deceased Mr. Scott in her story "The Garden Party."

ANSWER: Katherine MANSFIELD [or Katherine BEAUCHAMP; or Katherine MURRY]

18. Answer the following about Sulpicius Severus, for 10 points each.

[10] Sulpicius is the main source on the life of this bishop of Avila, who preached a namesake Gnostic heresy in Spain and southern Gaul, which said that human souls were fixed to bodies created by the devil. The Roman emperor Magnus Maximus had this guy executed in 385 AD for being a sorcerer.

ANSWER: PRISCILLIAN [the heresy is PRISCILLIANISM]

[10] Sulpicius Severus is best known for a hagiography of this saint, who allegedly took off his military cloak and slashed it in half to share with a freezing beggar at Amiens.

ANSWER: St. MARTIN of Tours

[10] Sulpicius Severus' account of the destruction of Jerusalem by Titus is thought to be drawn from this great Roman historian, who wrote a life of his father-in-law Gnaeus Julius Agricola in addition to his two major works, the *Histories* and the *Annals*.

ANSWER: Publius Cornelius TACITUS [or Gaius Cornelius TACITUS]

19. Debussy mockingly quoted the first several bars of this chord in "Golliwog's Cakewalk." For 10 points each:

[10] Name this chord, which consists of the notes F, B, D sharp, and G sharp. Its unresolved dissonance inspired classical music to break from tonal harmony towards atonality.

ANSWER: TRISTAN chord

[10] The *Tristan* chord was created by this composer, whose operas are traditionally performed in Bayreuth.

ANSWER: Richard WAGNER

[10] In the *Ring* cycle, Wagner uses a series of descending bass notes to represent this object. The opening storm music of *Die Walkure* combines this object's motif with Donner's thunder, and Wagner transforms this object's motif into a motif representing its owner's frustration.

ANSWER: Wotan's SPEAR [accept synonyms, like LANCE or PIKE]

20. When people smoke pot, one of these reactions converts the cyclized chemical THCA to the active THC. For 10 points each:

[10] Name, or describe, this process that leaves two radicals in the Hunsdiecker reaction. Pyruvate undergoes this process before being added to coenzyme A to form acetyl-CoA.

ANSWER: DECARBOXYLATION [or anything suggesting LOSS OF CO₂]

[10] This compound, the active form of Vitamin B6, is a prosthetic group common to coenzymes in numerous biological decarboxylations, particularly those involving amino acids. All enzymes with it, like glycogen phosphorylase, form imine linkages in the first step of reactions.

ANSWER: PYRIDOXAL-PHOSPHATE [or PLP]

[10] An important biological decarboxylation converts glutamate to this chief inhibitory neurotransmitter of the central nervous system.

ANSWER: GABA [or GAMMA-AMINOBUTYRIC ACID]

EXTRA BONUS

21. This artist painted the muses above the main staircase of the Boston Public Library, but is better known for his decorative mural cycles at the Sorbonne and Hôtel de Ville in Paris. For 10 points each:

[10] Name this French painter who co-founded the Société Nationale des Beaux-Arts and is known for his restrained mural paintings that he rendered in subdued colors to imitate frescos.

ANSWER: Pierre Puvis de CHAVANNES

[10] This French painter borrowed the composition of Puvis de Chavannes's *Doux Pays* for his own pointillist masterpiece, the *Bathers at Asnières*.

ANSWER: Georges SEURAT

[10] Puvis de Chavannes was heavily influenced by this Early Renaissance artist's fresco cycle *The Legend of the True Cross in Arezzo*. His best-known painting mysteriously shows three men in contemporary clothes chatting in the right foreground while ignoring the title biblical scene behind them.

ANSWER: Piero DELLA FRANCESCA