



ACADEMIC COMPETITION FEDERATION

2015 ACF NATIONALS
PACKET BY MINNESOTA AND WASHINGTON

TOSSUPS

1. This explorer was put on trial after he drunkenly attempted to hang two of his own crew members from a tree because they strayed too far from camp - as a result, this man briefly lost his seat on the Council of Justice and had to issue a public apology. During one expedition, he was sent to search for a “golden kingdom” of Lavo, but a mistranslation of Marco Polo in German led him to sail in a different direction. His companions included the merchant Isaac Gilsemans, whose drawings depict their travels, and the carpenter Frans Visscher, who planted flags for him in the name of Prince Frederick Hendrick. This man named the Three Kings Islands after founding Storm Bay and the Forestier Peninsula, and then nearly wrecked while founding the Fiji Islands. For 10 points, name this explorer who sailed from Batavia to discover Van Diemen’s Land, which is now named in his honor.

ANSWER: Abel Janszoon Tasman

2. Toward the end of this piece’s fourth movement, violas, cellos, and basses dither between D-sharp and E quarter notes for 21 measures while the violins assert the main theme in A major. The two D-major trio sections in this piece’s third movement are based on an Austrian pilgrims’ hymn. During the coda of this piece’s first movement, woodwinds and horns hold a four-octave E pedal point for 22 bars as strings repeat a four-bar motif. That movement has a long 4/4 *poco sostenuto* introduction in which sections exchange ascending 16th-note scales before switching to a 6/8 Vivace. A second-inversion A minor chord in the woodwinds and horns opens and closes the Allegretto second movement, whose theme is based on a long-short-short-long-long rhythm. It premiered on a program that included its composer’s *Wellington’s Victory* overture, and Richard Wagner referred to this symphony as “the apotheosis of the dance.” For 10 points, name this symphony completed four years after its composer’s *Pastoral Symphony*.

ANSWER: Ludwig van Beethoven’s Symphony No. 7 [or obvious equivalents, such as Beethoven’s Seventh Symphony; prompt on partial answers]

3. One formalism named for this man relies on a formula which states that the off-diagonal Hamiltonian matrix elements $H_{sub-i j}$ are equal to 1.75 times $S_{sub-i j}$ times the arithmetic mean of the diagonal elements $H_{sub-i i}$ and $H_{sub-j j}$ —that’s the Wolfsberg-Helmholtz formula. The transition states of pericyclic reactions can either have a Möbius topology or a topology named for this chemist. All of the Coulomb integrals are set to one value and all of the resonance integrals are set to another value in a method named for this man used to calculate the pi molecular orbitals of conjugated hydrocarbons. This chemist is the second namesake of an equation which states that the logarithm of the activity coefficient equals a temperature-dependent constant times the square of the charge times the square root of the ionic strength. For 10 points, name this German chemist who names a “limiting law” describing dilute electrolytic solutions with Debye (duh-BYE) and a rule stating that aromatic compounds possess $4n + 2$ pi electrons.

ANSWER: Erich Hückel

4. The architect Leah Beferman proposed a utopian archipelago which takes advantage of this freedom. In *United States v. Causby*, the Supreme Court ruled that an ancient law governing this right “has no place in the modern world.” Five fundamental freedoms of *this* were outlined in the 1946 Bermuda Agreement, and numerous countries tried to claim this right in the Bogotá Declaration of 1976. A Latin saying that begins “*Cujus est solum*” once provided the basis for individuals to claim this right. During the Falklands War, the Total Exclusion Zone N was an attempt by Britain to extend its right to *this* in the name of self-defense. Since the Paris Peace Conference of 1919, it has been established that nations and not individuals have the right to control this, at least within the bounds of their territory and several miles off their sea coast. For 10 points, name this legal right, defined as sovereignty over the area extending from the ground upwards.

ANSWER: international airspace [or answers indicating the right to control air (or space) (or sky), freedom of the skies (or air), or ownership of space (or sky) (or airspace)]

5. This poet imagines “the strongest thread / Of our frail plant” saying “Patience and Gentleness is Power” in “On a Lock of Milton’s Hair.” John Keats wrote that this man “set / Upon my ambitious head a glorious gain” in a poem about receiving a laurel crown from him. Apollo determines which of this man’s contemporaries are worthy of dining with him in a poem this man wrote for *The Reflector*. This author of “The Feast of the Poets” was satirized as Horace Skimpole in *Bleak House*. In a poem about an encounter with Thomas Carlyle’s wife, Jane Welsh, this man wrote “Time, you thief, who love to get / Sweets into your list, put that in!” Another poem by him describes a man waking “from a deep dream of peace” and asking an angel with a “book of gold” to “Write me as one that loves his fellow men”. For 10 points, name this English essayist, poet, and editor of the *Examiner* who wrote “Jenny Kissed Me” and “Abou Ben Adhem”.

ANSWER: Leigh Hunt [or James Henry Leigh Hunt]

6. This man receives a gift of magical pigs from an ally, but they are stolen, leading to a war between this man and the thief that ends when this man dies in single combat at a yellow ford. According to the *Stanzas of the Graves*, he was buried “where the waves beat against the land” at Aber Gwenoli. In another story, this man entered a castle and saw four endless chains attached to a golden bowl; when he touched the bowl, he became stuck to the floor. He was given a name referring to his golden hair by his foster father Teyrnnon, who found him after cutting off the arm of a horse-stealing beast. He brought back Manawydan as a second husband for his mother shortly after himself marrying Cigfa. This man lost his role as king of Dyfed after being killed in one-on-one combat by Gwydion. Shortly after his birth, his mother had puppy blood smeared on her face so that her maidens accuse her of infanticide. For 10 points, name this hero who appears in all four branches of the *Mabinogion*, the son of Pwyll and Rhiannon.

ANSWER: Pryderi [or Gwri Wallt Euryn; or Gwri of the Golden Hair]

7. Differential forms on a manifold named for this scientist form a Gerstenhaber algebra. This scientist’s namesake algebra is an associative algebra over a field with a bilinear operation which is antisymmetric and obeys the Leibniz rule and the Jacobi identity. This scientist names an operation which is the inverse of a similar operation named for Lagrange, is invariant under canonical transformations, and is used to determine the time evolution of phase space functions according to Liouville’s theorem. Auxetic materials have a negative value for a quantity named for this man which is defined as minus the ratio of transverse strain to axial strain. This man names an inhomogeneous equation whose uniqueness theorem can be used to develop the method of images. For 10 points, name this scientist who names an inhomogeneous version of the Laplace equation which states that the Laplacian of the electric potential equals the charge density divided by epsilon-naught.

ANSWER: Simeon Denis Poisson

8. A legend says that this man rebuked the merchant Makhan Shah for offering him two gold coins, because the Shah had previously pledged 500 gold coins to anyone who could save his belongings in a storm. That incident caused the Shah to identify him as a holy man, while he was meditating for 20 years in Bakala. He was arrested in Bihar and brought to Delhi by a ruler who had solidified his power at the Battle of Samugarh. That occurred after this man prevented the conversion of 500 Pandits who sought his counsel. As a result, he gained the epithet Hind-di-Chaadar, or the Shield of India. This man’s son emerged from a tent five times with a bloody sword to test the loyalty of his followers, and thus founded the Khalsa order. Beheaded in 1675 by Aurangzeb, this man succeeded Har Krishan as guru, and was the son of Hargobind. For 10 points, name this ninth guru of Sikhism, the father of Gobind Singh.

ANSWER: Guru Tegh Bahadur [or Hind-di-Chaadar until it is read]

9. An Alfred, Lord Tennyson poem ends each of its stanzas by mentioning “the golden prime” of this “good” character. In one appearance, he encounters a beggar and gives him a coin for alms, after which the beggar requests that this man strike him a blow. He marries a “cateress” and ends the nightly beating of a pair of black dogs after an episode in which he and two of his friends attend a party hosted by three ladies that is also attended by a trio of one-eyed kalandars. In another story, this character purchases a chest from a fisherman only to find the body of a woman cut into 19 pieces inside, after which he twice sets a three-day deadline for another character to solve the crime. A number of gifts from this man are carried to Serendib in the final voyage of Sinbad the Sailor. This character is fond of disguising himself as an ordinary citizen while touring Baghdad with his vizier Jafar. For 10 points, name this character from the *Arabian Nights*, a historical Abbasid Caliph.

ANSWER: Harun al-Rashid

10. This ruler faced an uprising sometimes named the Beach Revolt for the street on which liberal politicians met to put out a document called “Manifesto to the World,” which sought to curtail this ruler’s power. Early in his reign, he dealt with that revolt of the “*praieros*” and several others, including one named for its leader Francisco Sabino and one called the Cabanagem. This ruler was married by proxy to Teresa Cristina of the Kingdom of the Two Sicilies, though he had several mistresses, including Luisa De Barros, Countess of Barral. Following an invasion of his nation, he was referred to as the ‘Number-one Volunteer’ in defending the Mato Grosso from Francisco Solano Lopez. This man’s prime minister passed the Law of the Free Womb; his daughter, acting as his regent, sanctioned the signing of the ‘Golden Law’ freeing slaves in his nation. For 10 points, name this last Emperor of Brazil.

ANSWER: Dom Pedro II Braganza of Brazil [prompt on “Pedro”]

11. The protein INCENP recruits MKLP1 to an assembly responsible for establishing the site of this process. This process can be described by the polar relaxation model or the equatorial stimulation model. The latter of those two models was demonstrated by Ray Rappaport, who conducted an experiment on this process using toroidal sand dollar eggs. This process is disrupted by mutations to the pavarotti gene in *Drosophila* embryos. In this process, the RhoA GTPase regulates the formation of a structure composed of F-actin and myosin II filaments. In *Drosophila* oogenesis, errors in this process can result in syncytia connected by ring canals, while in plants this process requires the formation of a phragmoplast. The contractile ring causes the formation of a cleavage furrow in, for 10 points, what process which occurs alongside telophase and results in the partition of one cell into two?

ANSWER: cytokinesis [prompt on “cell division” or “abscission”]

12. A leper colony in this country is the subject of the film *The House is Black*. In a film set here, the on-trial protagonist states “I asked the Muse why he was hidden. He answered ‘It is you who are hidden.’” That film set in this country ends with a sequence in which an ex-convict holds a pot of flowers while riding on his friend’s motorcycle. A film that started this country’s New Wave follows Masht’s hay consumption and paranoia about being kidnapped by the Bolouris; that happens after his beloved cow disappears. Nader hires the lower-class Razieh to care for his father, who has Alzheimer’s disease in a film from here. Another film set here follows Hossain Sabzian, who conned the Ahankhah family by impersonating its filmmaker Mohsen Makhmalbaf. For 10 points, name this setting of *A Separation* and *Close-Up*, whose directors include Asghar Farhadi and Abbas Kiarostami.

ANSWER: Islamic Republic of Iran

13. This man’s father reportedly remained loyal to the Royalist cause during the English Civil War but suffered heavy fines, which explains this man’s family motto *Fiel Pero Desdichado*, or “faithful but unfortunate.” His sister Arabella married Charles Godfrey, but fathered the Duke of Berwick James FitzJames as a royal mistress. During one military victory, this commander sent Marshal Overkirk in a feint, and then broke through the Lines of Brabant at the town of Elixheim. Along with Sidney Godolphin, he was one of the “*Duumvirs*,” a reference to his influence at court, which was bolstered by his marriage to Sarah Jennings. He became Major General after his victory at Sedgemoor during the Monmouth Rebellion. For 10 points, name this favorite of Queen Anne, an English duke who joined with Eugene of Savoy to win the Battle of Blenheim.

ANSWER: 1st Duke of Marlborough [or John Churchill, 1st Duke of Marlborough]

14. Proclus’s commentary on this text explains that *dianoia*, or discursive thought, is superior to *doxa*, or opinion, because it can comprehend causes. In his *Hexameron*, Thierry of Chartres interpreted the Book of Genesis in the context of this work’s natural philosophy. During the Middle Ages, it was known mainly through a partial translation and commentary by Calcidius. This work claims that a “Living Thing” of abstract forms is the basis of the visible universe, which is situated in a spatial field, or *chora*. It describes the creation of order in the universe through the world-soul created by the demiurge. This dialogue is the only completed member of a projected trilogy of dialogues, which would also have included *Hermocrates* and *Critias*. This dialogue gives the universe the shape of a dodecahedron while claiming that the particles of the four elements are shaped like the other Platonic solids. For 10 points, name this Platonic dialogue that also discusses Atlantis.

ANSWER: Timaeus

15. One of this author's characters flees to Switzerland after he kills a soldier at a bloody May Day celebration thrown by some syndicalists during which his friend Olivier dies. That title character created by him flees to Paris after killing yet another soldier, who was trying to rape the peasant girl Lorchen. This man's study of eastern mysticism, which includes a three-volume life of Swami Vivekananda, inspired Sigmund Freud's discussion of the oceanic feeling in *Civilization and its Discontents*. Dmitri Kabalevsky created an operatic adaptation of this man's novel *Colas Breugnon*. Because it "flows like a river," he dubbed his longest work, which includes 1911's *The Burning Bush* and 1904's *Dawn*, a "roman-fleuve". That novel opens by describing a son of Melchior Krafft who becomes a court violinist for a German grand duke and then a famous composer in France. For 10 points, name this Nobel laureate, the author of the ten-volume *Jean-Christophe*.

ANSWER: Romain Rolland

16. The "quadratic" form of this problem, subject to binary and linear constraints, was first described by Gallo, Hammer, and Simeone in 1980. Finding the solution to this problem is necessary for finding the key in a Merkle-Hellman cryptosystem. A fully polynomial time approximation scheme for solving this problem is called the "one plus the error" method and has a runtime of "big o of n to the 2 to the one over the error." George Dantzig created a greedy algorithm to solve this problem that works by creating a ratio then choosing the items with the lowest ratio. That algorithm was created for the "unbounded" form of this problem; however, the "0-1" version of this problem is much more common. This problem, which can be solved in pseudo-polynomial time by dynamic programming, is NP-complete in its "decision form." For 10 points, name this problem which attempts to maximize profit at a certain weight limit as items are placed in a bag.

ANSWER: knapsack problem [or rucksack problem]

17. As a young man, this person crawled into a cave with a rope tied about his legs in a successful effort to kill what was supposedly the last wolf in Connecticut. He saw his first military action at the Battle of Lake George and, after being captured by Caughnawaga Indians while serving with Rogers Rangers near Crown Point, he narrowly escaped being roasted alive. He was tricked into withdrawing by Henry Clinton at the so-called Battle of the Clintons, an action which put him before a Congressional Court of Inquiry. He was second-in-command to Artemas Ward in the Army of Observation, and along with Ward, Philip Schuyler and Charles Lee, was one of four major generals appointed by the Continental Congress in 1775. This man, who retreated at the Battle of Long Island, allegedly gave William Prescott the order to inform his troops "Don't fire until you see the whites of their eyes." For 10 points, name this Revolutionary War general, the ranking officer at the Battle of Bunker Hill.

ANSWER: Israel Putnam

18. The Irish doctor Edward Cullen fraudulently claimed to have found a river passage through this region, which prompted a US Navy expedition led by Isaac Strain where seven people died. The anthropologist Wade Davis accompanied Sebastian Snow when he crossed this region on foot. The near extinction of the Cueva people in this region following arrival of the Spanish allowed the Kuna to take over. John Blashford-Snell failed to get his Range Rover through the Atrato Swamp in this region, which contains Los Katios National Park and Cerro Tacarcuna mountain. A company named for this place, led by William Paterson, founded the aborted colony of Caledonia that bankrupted its nation and forced it to enter the 1707 Act of Union. The Pan-American Highway does not pass through this area. For ten points, name this "Gap" in Central America which was the namesake of a "Scheme" to build a colony on the isthmus of Panama.

ANSWER: Darién Gap [or Gulf of Darien]

19. In one scene in this novel, a character responds to a series of predictable lies with routine jokes until he hears a defrocked priest say "we are all members of one another". This novel's protagonist was present at that scene due to a comically botched attempt to steal six electric "eye-rons". A character in this novel spends most of her time staring at a nearby rail line from her wheelchair. This novel ends with its protagonist's April Fools' Day suicide, after the police captain Record Head Bednar gets Sparrow Saltskin to reveal that the protagonist killed Nifty Louie Fomorowski. This novel centers on an aspiring drummer who lives with his psychosomatically-paralyzed wife Zosh but has an affair with "Molly-O" Novotny, in whose apartment he beats the "thirty-five-pound monkey on [his] back", his phrase for his heroin addiction. For 10 points, name this novel about Francis Majcinek, or "Frankie Machine", written by Nelson Algren.

ANSWER: The Man with the Golden Arm

20. This artist included the inscription “Bibius Vincit” in a portrait of a boy with his dog. Another painting by this artist, *Girl with a Dwarf*, is thought to depict Marguerite of Savoy. A burgeoning Anthony van Dyck learnt many of his portrait techniques when he visited this then-80 year old artist. Michelangelo’s off-hand remark that it would be difficult to portray a weeping boy led this artist to create a charcoal sketch on black paper depicting Asdrubale being bitten by a crawfish; that work inspired Caravaggio to paint *Boy Bitten by a Lizard*. This artist included portraits of Lucia, Minerva and Europa in a family portrait titled *The Chess Game*. Elizabeth of Valois was the subject of many of this artist’s portraits since she was the court painter to Philip II of Spain. For 10 points, name this Renaissance artist from Cremona who made a painting in which her teacher Bernardino Campi paints her.

ANSWER: Sofonisba Anguissola [or Sofonisba Anguisciola]

TIEBREAKER

21. Kyle Herkenhoff proposed that the increasing availability of this concept partly explains the rise of unemployment duration since the late 1970s, and the contemporaneous skewing of the wealth distribution, since the unemployed can forego unsuitable job offers. Mian and Sufi’s research shows that zip codes in which house prices dropped the most during the financial crisis exhibited the largest drop in demand for non-tradeable services thanks to the buildup of this quantity, which titles their book. The most productive agents are also the least patient ones in Kiyotaki and Moore’s endogenous business cycle model, which imposes a collateral requirement to limit this quantity. In that model, a negative shock to the market value of collateral provokes insolvency, which brings about a Fisherian deflation driven by this quantity. The accumulation of this quantity is the driving force in Hyman Minsky’s financial instability hypothesis. For 10 points, what is this quantity, which goes up the more spending exceeds income?

ANSWER: debt [or credit; prompt on “mortgages”; the title of Mian and Sufi’s book is House of Debt]

BONUSES

1. This piece is for four dancers in white shirts with blue skirts and black tights. It has four movements that correspond to times of day, and its music was written by Thierry De May and Peter Vermeersch. For 10 points each:

[10] Name this repetitive dance piece by Anne Teresa de Keersmaeker, the breakthrough work of her Belgian ensemble, after which this piece was named.

ANSWER: “Rosas Danst Rosas” [or “Rosas Dances Rosas”]

[10] “Rosas Danst Rosas” is often described by this adjective, which also describes the style of short phrases which characterizes the music of Terry Riley.

ANSWER: minimalist [or minimalism]

[10] De Keersmaeker’s fellow Belgian, Frederick Ashton, based his *Façade* is based on this composer’s *Façade*, who is better known for composing a viola concerto premiered by Paul Hindemith.

ANSWER: Sir William Turner Walton

2. In addition to ninety often double-entendre-heavy riddles, this collection’s contents include three allegorical poems about animals, including “The Phoenix”, “The Panther”, and one describing the “Fastitocalon”. For 10 points each:

[10] Name this codex, the source for such anonymous works as “The Whale”, “The Wanderer”, and “The Wife’s Lament”.

ANSWER: the Exeter Book [or the Codex Exoniensis]

[10] The poems in the Exeter Book were written in this language, which was also used to write the poems in the Vercelli Book and the Nowell Codex, the latter of which includes *Beowulf*.

ANSWER: Old English [or Anglo-Saxon; prompt on “English”]

[10] The fourth major codex of Old English literature is named for this poet, though he almost certainly wrote none of the poems in it. A poem named for him a nine-line hymn describing an illiterate cow-herd singing a song of the creation of the world, and it survives in Bede’s *Ecclesiastical History*.

ANSWER: Caedmon

3. A Pete Seeger song instructs this man to “listen and I’ll show you that the foreigners you hate / Are the very same people made America great.” For 10 points each:

[10] Identify this politician known as “The Man” who once petitioned the Senate to pass a one billion dollar bill that would deport all African Americans to Liberia. He articulated his racial views in his book, *Take Your Choice: Separation or Mongrelization*.

ANSWER: Theodore Gilmore Bilbo

[10] Bilbo once threatened to move the location of this university if it didn’t admit more impoverished white students. In the 1960s, James Meredith became the first African American to attend this university.

ANSWER: University of Mississippi [or Ole Miss]

[10] This campaign was organized by SNCC and CORE in 1964, under a coalition called the Council of Federated Organizations, to register as many black voters as possible in Mississippi. It was directed by Bob Moses.

ANSWER: Freedom Summer [or the Mississippi Summer Project]

4. A controversial 1999 *Science* paper by Losey et al. found that very large amounts of Bt corn pollen increased mortality of larvae from this species. For 10 points each:

[10] Name this North American milkweed butterfly whose population has declined more than 90% in two decades. Its eastern populations undergo a yearly, multi-generational migration to overwintering sites in Mexico.

ANSWER: monarch butterfly [or Danaus plexippus]

[10] A well-studied example of Müllerian mimicry are the *melpomene* and *erato* species of this genus of butterflies, whose mimicry was first studied by Henry Bates during his trip to the Amazon rainforests. They are also called longwing butterflies.

ANSWER: Heliconius butterflies [or Heliconians; or Heliconids]

[10] Swallowtail butterflies exhibit a prime example of this type of selection, since intermediate color phenotypes are worse for camouflage than extreme color phenotypes, leading to two distinct color morphs.

ANSWER: disruptive selection

5. This book describes the means through which contradictory fictions lead us to useful conclusions as the “method of antithetic error,” and it holds that all knowledge not based on the principles of succession or co-existence must be analogical. For 10 points each:

[10] Name this book by Hans Vaihinger, which claims that since metaphysical doctrines can never be proven, we must make pragmatic fictive judgments about them. It also coined the term “logical positivism.”

ANSWER: The **Philosophy of ‘As If’**: A System of the Theoretical, Practical, and Religious Fictions of Mankind [or Die **Philosophie des Als Ob**: System der theoretischen, praktischen und religiösen Fiktionen der Menschheit auf Grund eines idealistischen Positivismus]

[10] Vaihinger wrote a commentary on this book by Immanuel Kant, which uses $7 + 5 = 12$ as an example of a synthetic *a priori* truth, introduces four antinomies of reason, and contains metaphysical and transcendental expositions of space and time.

ANSWER: **Critique of Pure Reason** [or **Kritik der reinen Vernunft**]

[10] This neo-Kantian philosopher, a student of Hermann Cohen, described man as a “symbolic animal” in *Philosophy of Symbolic Forms*. His other works include *The Myth of the State*.

ANSWER: Ernst **Cassirer**

6. The interviewees for this book included Rip Torn and football coach George Allen. For 10 point each:

[10] Name this 1974 book which is divided into sections such as “The Age of Charlie Blossom,” “The Quiz Kid and the Carpenter,” and “Ma and Pa Courage.”

ANSWER: **Working**: People Talk About What They Do All Day and How They Feel About What They Do

[10] This oral historian, who played the news reporter Hugh Fullerton in the film *Eight Men Out*, wrote *Working* as well as other oral works like *Hard Times* and *The Good War*, about the Great Depression and World War Two respectively.

ANSWER: Louis “Studs” **Terkel**

[10] Erik Larson’s book *The Devil in the White City* is set during the 1893 World’s Columbian Exposition in this city, where Studs Terkel often interviewed people, including its mayor Richard Daley.

ANSWER: **Chicago**

7. Answer the following about novels in which weird shit happens to babies, for 10 points each.

[10] The protagonist of this man’s novel *Piercing* struggles against a compulsion to stab his infant child with an ice pick. Hashi and Kiku are two of the title abandoned children of another of his novels.

ANSWER: **Ryu Murakami** [accept names in either order; prompt on partial answers]

[10] Aborted fetuses are turned into gilled creatures called “aquans” who are more fit to survive the coming flooding of Earth in this Kobo Abe novel.

ANSWER: **Inter Ice Age 4** [or **Dai-yon Kampyoki**]

[10] The painter and boat-builder Henri experiences a drunken hallucination in which a “devilish young man” cuts a baby’s throat with a straight razor in *Cannery Row*, a novel by this American author of *East of Eden*.

ANSWER: John **Steinbeck** [or John Ernst **Steinbeck**, Jr.]

8. The so-called “Famine Stela” provides a list of priests serving this god, who formed a triad with his wife Satet and his daughter Anuket. For 10 points each:

[10] Name this god, who was often depicted at a potter’s wheel creating humanity.

ANSWER: **Khnum**

[10] Khnum was responsible for this important yearly event, which brought new silt and clay for him to create humanity. Other Egyptians called it the “arrival of Hapy” since Hapy was also thought to be responsible for it.

ANSWER: the **flooding of the Nile**

[10] Khnum’s main temple was at this location, an island in the Nile. The Famine Stela claims that the flooding of the Nile was caused by two underground “breasts” or “caves” beneath this island, from which the waters came.

ANSWER: **Elephantine**

9. These magistrates were responsible for summoning the Comitia Curiata during the early and middle phases of the Roman Republic. For 10 points each:

[10] Identify these people who carried the *fasces* for praetors, consuls and dictators. They also helped clear the way in crowds and protected officials when they were speechifying.

ANSWER: **lictors**

[10] Each Roman consul had a posse of this many lictors. The oldest written legal code of the Roman Republic was the law of this many tables, produced circa 450 BCE and advertised on bronze plaques in the Roman Forum.

ANSWER: **twelve**

[10] The original Twelve Tablets may have been destroyed when this chief of the Senones defeated the Romans at the Battle of the Allia.

ANSWER: **Brennus** [or **Brennos**; or **Brennius**]

10. This hypothesis was first formulated in the paper “Magnetic anomalies over oceanic ridges.” For 10 points each:

[10] Name this hypothesis which states that “magnetic striping” should be found in cooled crust in the ocean floor if seafloor spreading truly occurs.

ANSWER: **Vine-Matthews-Morley Hypothesis**

[10] Stripes of opposite polarity in ocean crust are delineated by these events, in which the polarity of the Earth’s magnetic field changes. The Brunhes-Matuyama example of these events is the most recent and occurred 780,000 years ago.

ANSWER: **geomagnetic reversal**

[10] Cowling’s theorem, which restricts axisymmetric magnetic fields in geodynamo theory is proved by invoking this theorem, which was itself proven by Hannes Alfvén, which states that if you have a perfectly conducting fluid, the magnetic field lines move with the motion of the fluid.

ANSWER: **frozen flux** theorem [or the **frozen-in** theorem]

11. For the coronation of Emperor Charles VI, this composer wrote a melodramatic piece about St. Wenceslas, which contains two fugal expositions for four and five voices in its first chorus, whose subjects are later used for a double fugue. For 10 points each:

[10] Name this Baroque Czech composer of *Sub Olea Pacis et Palma Virtutis*, also known for his late masses, such as the *Missa Votiva*, *Missa Dei Patris*, and *Missa Dei Filii*.

ANSWER: Jan Dismas **Zelenka**

[10] This teacher of Zelenka also wrote his Colossal Baroque opera *Costanza e Fortezza* for the coronation of Charles VI and Elizabeth Christine. He also popularized species counterpoint in his influential treatise *Gradus ad Parnassum*.

ANSWER: Johann Joseph **Fux**

[10] Zelenka was also friends with this prolific composer, a kapellmeister of Hamburg who wrote the first known viola concerto. This godfather of C.P.E. Bach also wrote twelve *Paris Quartets* and 1733’s *Tafelmusik*.

ANSWER: Georg Philipp **Telemann**

12. *Note to moderator: Do not read the alternate answers to the first bonus part to the teams.* This model’s assumptions include that only a monolayer is formed and there are no intermolecular interactions between molecules in the monolayer. For 10 points each:

[10] Name this model, which produces an equation stating the fractional coverage equals a constant times pressure over 1 plus a constant times pressure.

ANSWER: **Langmuir** isotherm [or **Langmuir** equation; do NOT read aloud, but accept answers indicating this is Irving **Langmuir**’s model of adsorption kinetics]

[10] The Langmuir isotherm describes this process, in which a molecule in the gas or liquid phase adheres to a surface.

ANSWER: **adsorption** [do NOT accept “absorption”, make teams spell it if necessary]

[10] In this mechanism for reactions on surfaces, one of the reactant molecules adsorbs to the surface, while the second reactant remains in the gas phase as it interacts with the adsorbate.

ANSWER: **Eley-Rideal** mechanism

13. Answer some questions about a man who unfortunately is not Charles Tupper, but did replace Charles Tupper as the prime minister of Canada, for 10 points each.

[10] This husband of the very homely Zoe Lafontaine created the Royal Canadian Navy with his Naval Service Bill.

ANSWER: Wilfrid **Laurier**

[10] Laurier bested Tupper partly due to the “schools question” brewing in this Canadian province, a debate about separate funding for Catholic and Protestant schools, first tested by a court case out of this province’s city of Winnipeg.

ANSWER: **Manitoba**

[10] This French-Canadian leader protested Laurier’s decision to contribute troops to South Africa, and opposed conscription under Robert Borden which he referred to as “blood tax.” The founder of Montreal’s *Le Devoir* paper, he popularized the notion of a “pact of two founding peoples.”

ANSWER: Henri **Bourassa**

14. This novel ends with the collapse of Western civilization when a bomb is dropped on the house of M. Calgues and nineteen other resistors. For 10 points each:

[10] Name this anti-immigration novel by Jean Raspail in which immigrants flood into France after a giant provokes a crowd into forming the Last Chance Armada.

ANSWER: The **Camp of the Saints** [or Le **Camp des Saints**]

[10] One major popularizer of *The Camp of the Saints* was this dramatist, who divided his works into *pieces roses* and *pieces noires*, the latter of which includes *The Restless Heart*. His *pièces costumées* include *The Lark*.

ANSWER: Jean **Anouilh**

[10] Anouilh wrote a play about the murder of this clergyman which incorrectly depicted him as a Saxon. This man is confronted by four tempters in T. S. Eliot’s *Murder in the Cathedral*.

ANSWER: St. Thomas a **Becket** [or St. **Thomas of Canterbury**; or St. **Thomas of London**]

15. The second most common cause of this disorder is the destruction of both cholinergic and dopaminergic neurons by Lewy bodies. For 10 points each:

[10] Name this class of disorders characterized by a general, long-term decline in cognitive ability, especially in old age. Its most common cause is Alzheimer’s disease.

ANSWER: **dementia**

[10] This most common psychometric test to screen for dementia involves a series of simple tasks like serial sevens, immediate recall, and spelling “world” backwards. It is usually scored out of 30 points.

ANSWER: **mini-mental state examination** [or **MMSE**; or **Folstein** test]

[10] The Barnes one of these constructs is another psychometric test for dementia in rats. Edward Tolman developed his theory of cognitive maps after observing rats use these things.

ANSWER: **mazes**

16. Answer the following about paintings and William Shakespeare, for 10 points each.

[10] David Garrick wears a blue medal and grasps a sword in William Hogarth’s lucrative and dramatic portrait of him as this character.

ANSWER: **Richard III** [prompt on “**Richard**”]

[10] This advocate of the Grand Style painted *David Garrick between Comedy and Tragedy*. He depicted another Shakespearean actor in *Sarah Siddons as the Tragic Muse*.

ANSWER: Joshua **Reynolds**

[10] This other artist made the portrait *The Infant Shakespeare attended by Nature and the Passions*. He also made many portraits of his muse, Emma Hamilton, the mistress of Horatio Nelson.

ANSWER: George **Romney**

17. A section titled “Opus Posthumous” opens the second volume of this collection, which is called *His Toy, His Dream, His Rest*. For 10 points each:

[10] Name this semi-autobiographical collection of poems whose first entry opens with the lines, “Huffy Henry hid the day, unappeasable Henry sulked”.

ANSWER: The **Dream Songs**

[10] This Confessional poet of *The Dream Songs* committed suicide at the University of Minnesota in 1972. Ben Shahn illustrated his sequence *Homage to Mistress Bradstreet*.

ANSWER: John **Berryman** [or John Allyn **Berryman**]

[10] In 1950, Berryman published a study of this earlier American poet. His first collection includes poems beginning “A god in wrath / was beating a man” and “I saw a man pursuing the horizon”, and opens with a poem describing the “clang and clang of spear and shield”.

ANSWER: Stephen **Crane**

18. During the siege of this city by Lala Mustapha Pasha, the resisting commander Marco Bragadino was flayed alive, his lieutenant Tiepolo was hanged, and a captured girl set fire to a store of gunpowder, destroying her slave ship. For 10 points each:

[10] Name this port city, which was held by Venice as the last Christian possession in Cyprus until it was captured by the Ottomans in 1571.

ANSWER: **Famagusta** [or **Magusa**]

[10] The defense of Famagusta was partly carried out by a member of this Venetian family. Its best known member, the elderly and blind Enrico, served as doge during the Fourth Crusade.

ANSWER: **Dandolo** [or **Dandulus**]

[10] Famagusta developed as a medieval town under this French royal house whose kings of Cyprus included Hugh IV and his son Peter I, who led the failed Alexandrian Crusade in 1365. The first king of Cyprus from this house passed it to his brother Amalric on his death in 1194.

ANSWER: House of **Lusignan**

19. Each vertex on these objects is required to conserve baryon number, lepton number and charge. For 10 points each:

[10] Identify these tools used to visualize exchange forces in QED. Observable particles are indicated by the lines that enter or leave these things.

ANSWER: **Feynman diagrams**

[10] In quantum field theories, a Feynman diagram can be viewed as a term in the perturbative Wick expansion of this unitary operator which relates the final and initial states of a particle interaction.

ANSWER: **S-matrix** [or **scattering-matrix**]

[10] These three letters denote the different “channels” of Feynman diagrams used to represent two-particle scattering events. These three letters also denote the Mandelstam variables.

ANSWER: **s**, **t**, and **u** [do NOT accept partial answers]

20. St. Augustine argued that the eighth and final one of these statements followed from the free-will choice of accepting the first seven. For 10 points each:

[10] Name these blessings which start the Sermon on the Mount. They include blessings for the poor and the meek, the latter of whom will “inherit the earth.”

ANSWER: **Beatitudes** [or **Beatitudines**]

[10] Four of the Beatitudes also start this sermon from the 6th chapter of Luke, which also contains the four woes. This speech occurs after Jesus chooses his twelve Apostles, and it shares many parables in common with the Sermon on the Mount.

ANSWER: **Sermon on the Plain**

[10] The Sermon on the Plain ends with this parable, in which Jesus compares those who act on his words to those who construct houses on a solid foundation: when the flood comes, the house will not be destroyed.

ANSWER: Parable of the **Two Builders** [or Parable of the **Wise and Foolish Builders**; or Parable of the **Wise and the Foolish Builders**; or The **Two Foundations**; or Parable of the **House on the Rock**]