

## ACF Nationals 2016

Packet by MIT B (Julian Fuchs, Bryce Hwang, Oliver Ren, Erica Liu, Josh Xiong) and Stanford B (James Bradbury, Alex Freed, Kyle Sutherlin, Nathan Weiser)

### Tossups

1. This artist dubbed his method “the bump and the hollow” in a multi-part article called “Mechanics of Form Organization in Painting”. In a double portrait by this artist, he stands bare-chested beside his seated wife while a family of three plays by the sea in the bottom left. Two men use scythes to harvest a crop in another work of his set in Martha’s Vineyard, *July Hay*. A man struggles with a bull as two women and a boy seated on a cornucopia look on in this artist’s mural *Achelous and Hercules*. Another mural by this man includes the panels *Outreaching Hands* and *Instruments of Power* and depicts American life in the 1920’s. This artist of *America Today* mentored Jackson Pollock and painted a mural in the Missouri State Capitol. For 10 points, name this American Regionalist who shares a name with his grand-uncle, a senator.

ANSWER: Thomas Hart **Benton**

2. A group of characters in this novel are anxious about a letter they receive, and after four days of trepidation, they open it and are delighted to learn it’s only a request for a beer recipe. The protagonist of this novel embarrasses himself in front of a girl when he accidentally serves himself too many biscuits and then forces himself to “demolish” them out of shame. An extremely long dream sequence in this novel describes the protagonist’s idyllic childhood in the countryside, where the only things to worry about are a rickety balcony and a nearby ravine. The servant Zakhar cannot clean the home of the title character, who is in love with Olga, but loses her to his friend Andrei Stoltz. The title character of this work does not get out of his bed until chapter four, and is an archetypical “superfluous man”. For 10 points, name this novel about a lazy Russian nobleman, written by Ivan Goncharov.

ANSWER: **Oblomov**

3. This fate befalls an Apulian shepherd after he mockingly copies the dance of some nymphs that he scared away from Pan’s home. In the *Argonautica*, this fate occurs to the Hesperides after they watch Orpheus pray to the Gods for water to drink. An Oceanid asked Zeus to inflict this fate onto her after giving birth to the child of a Titan who, during sex with her, turned into a horse to avoid detection by his wife. The daughter of Cenchreis asks for this fate to happen to her after she is impregnated by her father the king of Cyprus, Cinyras, as punishment for her mother’s hubris. Chiron’s mother Philyra experienced this fate, as did a group of sisters who were on the banks of the Eridanus River mourning their late brother, Phaethon. This fate happens to a Thessalian nymph after she prays to her father, the river god Peneus. For 10 points, name this fate experienced by Adonis’s mother Myrrha, that also allows Daphne to escape Apollo.

ANSWER: being **turned into trees** [accept equivalents like **dendrifaction**; accept answers involving **turning into** specific kinds of trees such as **poplar** trees, **willow** trees, **elm** trees, etc]

4. An early archbishop of this city was called “Apostle of the Slavs” for converting Polabian Slavs. An ecclesiastical history called “[this city’s] *Centuries*,” written by Matthias Flacius, covers 13 centuries up to the year 1298, and accuses the pope of being the Anti-Christ. A charter written in this city in 1108, attributed to Archbishop Adelgot called for a Christian war of conversion, and led Boleslaw III to conquer Pomerania. A set of rights named for this city, developed under Otto the Great, became the basis for the town laws of the Holy Roman Empire. This city’s namesake “quarter” became a synonym for lack of mercy after almost all of its residents were slaughtered, except the few that took refuge in this city’s cathedral, the oldest German Gothic church. That Imperial siege of this city was led by Pappenheim and Count Tilly in 1631. For 10 points, name this German city on the Elbe which was sacked during the Thirty Years’ War.

ANSWER: **Magdeburg** [or **Meideborg**]

5. An aromatic ring containing this functional group is formed in the first step of the Houben-Hoesch reaction. A derivative of this functional group containing a para-methoxy-phenyl or PMP group reacts with a carbonyl and proline in an asymmetric form of one reaction. Pyridoxal phosphate, also known as the active form of vitamin B6, links to enzymes by forming this functional group. This functional group reacts with m-CPBA to form ox-az-iri-dines. This functional group is formed in the first step of the Mannich reaction. A cyanide anion nucleophilically attacks this functional group in the Strecker synthesis. Enamines tautomerize to form these compounds, which are reduced using sodium cyanoborohydride in “reductive amination” of carbonyls to form amines. Schiff bases are a form of, for 10 points, what nitrogenous analogue of a carbonyl that consists of a carbon double-bonded to a nitrogen?

ANSWER: **imine** (ih-meen) [or **iminium** ion, accept **Schiff base** before mention, accept “ald**imine**” and “ket**imine**” (keet-ih-meen) but do NOT accept or prompt on “ketamine” (keh-tuh-meen), do NOT accept or prompt on “amines” or “imides;” you may wish to have players spell the answer if you are unable to determine their answer]

6. The fifth edition of this book includes passages from its author’s correspondence with Bishop Stillingfleet, who argued that the “dualism” of this book was dangerous to Christianity. This book refutes the belief that “our whole being” is but the “deluding appearances of a long dream” by suggesting that “our dreamer” put his hand “into a glass furnace” so that he could be “waked into a certainty.” Its author suggests that he is an under-laborer “removing some of the rubbish, that lies in the way of knowledge” in its “Epistle to the Reader.” This book resolves the “whole mystery of genera and species” using nothing more than “nominal essences” in its third part, “Of Words.” It uses the example of a piece of porphyry refracting light to distinguish between complex and simple ideas. For 10 points, name this book which posits that the human mind is a *tabula rasa* at birth, which was written by John Locke.

ANSWER: *An **Essay Concerning Human Understanding***

7. A book by Bertram Wyatt-Brown analyzes how people in this region committed violence in order to uphold unwritten codes of reputation. Another book argues that this region became obsessed with a “cult of gyneolatry,” in which it strategically idolized an ideal female image. That book was written by W. J. Cash, and is named for the “mind” of this region. An essay collection about the “burden” of this place’s history was written by C. Vann Woodward, who specialized in studying it. V. O. Key wrote a classic about the politics of this region, whose occupation was criticized by E. Merton Coulter and other historians of the Dunning School. Mark Twain claimed that Walter Scott’s novels did “measureless harm” to this region by inspiring its residents to believe in “sham chivalries.” For 10 points, name this region of the United States where factions like the Fire-Eaters sparked the Civil War.

ANSWER: the American **South**

8. A poem by this author continues from where Gerard Manley Hopkins's “Inversnaid”, praising the title entities for overwhelming his “narrow vegetable realm” and shaping “the creature that is I”. This author of “Long Live the Weeds” asks “which I is I?” in a poem that states that madness is but “nobility of soul at odds with circumstance”. This poet marvels at “the shapes a bright container can contain” in a poem whose four stanzas each end with parentheticals, including “(But what prodigious mowing we did make)” and “(I measure time by how a body sways)”. The whiskey-breathed title character of another of his poems “beat time on” the narrator’s “head with a palm caked hard by dirt” while performing the title dance. This poet claimed to “feel my fate in what I cannot fear” in a villanelle that ends with the line “I learn by going where I have to go”. For 10 points, name this American poet of “I Knew a Woman”, “My Papa's Waltz”, and “The Waking”.

ANSWER: Theodore **Roethke** [or Theodore Huebner **Roethke**]

9. Clayton developed the GGI as part of a method to estimate the maturity of this substance by examining how much gas is emitted by it. Tissot classified this substance into three different types, each with different Arrhenius activation parameters, based on the ratio of this substance’s constituent elements and its subsequent maturation track on a van Krevelen diagram. Type IV of this substance is made from polycyclic aromatic hydrocarbons, while Type II examples of this component of source rocks include resinite and sporinite. Crum Brown coined the name for this material, whose sapropelic type is often found in underwater rocks. When Types I and II of this substance are heated, it produces bitumen. For 10 points, name this waxy, organic component of oil shale that is insoluble in most organic solvents, and which is a precursor to many fossil fuels.

ANSWER: **kerogen** [prompt on “(oil) shale”]

10. The government of this place ordered the hanging of Thomas Granger, after he was accused of having sex with animals. Its leaders were attacked in a series of letters during the Oldham-Lyford Scandal – one man implicated in that affair, John Billington, was later executed at this place for murdering John Newcomen. Another leader of this place was attacked in the satirical pamphlet “The Valiant Expedition of Captain Shrimp.” The Merchant Adventurers designated Christopher Martin to be the first governor of this place, but he was replaced by Jonathan Carver at the behest of the Leiden Congregation. Several men were banished from here to the Isles of Shoals, including Thomas Morton, who was accused of depraved acts at Merrymount. A history of this place’s “Plantation” was written by its founder, William Bradford. For 10 points, name this colony whose members included Myles Standish, founded by settlers aboard the *Mayflower*.  
ANSWER: **Plymouth** Colony [or **New Plymouth** or **Plymouth Bay**, accept answers such as “the religious council of Plymouth Colony,” etc. – prompt on less specific answers such as “Massachusetts” or “America”]

11. A character remembers how his friendship with this *different* character suddenly ceased after this man pointed at a hen and her chicks and said, “pretty–pretty”. This man angers two of his children by remarking “but I beneath a rougher sea / was whelmed in deeper gulfs than he”, a quote from William Cowper’s poem “The Castaway”. One person describes this man’s work using the metaphor of “thinking of a kitchen table, when you’re not there”. In the beginning of the novel, a boy cutting out pictures from an Army and Navy catalogue suddenly gets the urge to kill this man. This man laments his inability to mentally get past the letter Q to the letter R and often declaims lines from “The Charge of the Light Brigade”. This man’s children Andrew and Prue die during the section “Time Passes”, while in the final section he finally takes Cam and James on the novel’s title trip. For 10 points, name this parental figure from Virginia Woolf’s novel *To the Lighthouse*.

ANSWER: **Mr. Ramsay** [accept answers including the name **Ramsay** and words like **father** or **husband** or **adult man**; prompt on “**Ramsay**”; before “*To the Lighthouse*” is read, prompt on answers like “the **father** from *To the Lighthouse*” and after prompting on that accept **Mr. Ramsay**]

12. A composition for this ensemble repeats a *senza espressione* cantilena three times in its second movement, and all four movements of that work are built around a C–D flat–G chord. The second movement of an A major work of this type is a poco allegretto *dumka*, which is followed by a presto movement marked *furiant*. In addition to those works by Erwin Schulhoff and Antonin Dvorak, the repertoire for this ensemble contains a G major piece that opens with a viola playing a semi-trill before a violin enters playing two ascending fifths, one in the home key and one in E-flat. Brahms wrote two pieces for this ensemble, which is also used for Tchaikovsky’s *Souvenir de Florence*. Another work of this type included a controversial inverted ninth chord and was inspired by a Richard Dehmel poem. For 10 points, Schoenberg’s *Verklarte Nacht* is written for what musical ensemble created by adding a viola and cello to a string quartet?

ANSWER: string **sextet**

13. During this period of time, it is recommended that you put your hand on the heads of all orphans you encounter, for you will be rewarded with a drink of *salsabil*. A text called *The Garden of the Martyrs* inspired the *rowzeh khani* ritual during it. *Kuhl* or *surma*, both of which are a type of antimony powder, is often applied over the eyes during this period of time since one will “never have sore eyes” afterwards. Some people celebrate this period of time to commemorate the curing of Job’s leprosy and the drowning of the Pharaoh. Other practitioners hold blood donation drives during it to replace *tatbir* and *matam*, two rituals that frequently involve men cutting themselves with a *zanjeer*, a type of dagger that hangs from a chain. Taking place on the first 10 days of the Islamic calendar is, for 10 points, what period of time during which Shiite Muslims commemorate the death of Husayn?

ANSWER: **Mourning of Muharram** or **Remembrance of Muharram** or **Muharram** Observances [accept Day of **Ashura** or **tenth of Muharram** as well]

14. This man organized rugby star Peter Howard and other thugs affiliated with his cause into a militia that he nicknamed “The Biff Boys.” His views were supported and then disavowed by John Strachey, who defected from his political party to join the Communists. He abandoned the Labour Party after it rejected his economic platform, known as his namesake “Memorandum.” This man divorced his wife Lady Cynthia to marry Diana, one of the Mitford sisters. A mass defection from this man’s organization was led by William Joyce, the propagandist later nicknamed “Lord Haw-Haw.” A clash between policemen protecting this man’s rally and Socialist protesters was referred to as the Battle of Cable Street. He tried to transition the New Party into a political organization modeled after Mussolini’s Blackshirts. For 10 points, name this leader of the British Union of Fascists.

ANSWER: Oswald **Mosley** [or Sir Oswald Ernald **Mosley**]

15. The spatial triad of the Lemaître vierbein of this system with respect to the Painlevé chart is identical to the trivial frame field of the spherical chart in Euclidean 3-space. This system's inverse cubic term in its effective potential leads to precession proportional to the sum of the masses over the semi-major axis. One coordinate representation of this system can be further transformed using the hyperbolic tangent into a diagram consisting of two diamonds and two triangles; that Carter-Penrose diagram for this system displays an unphysical past singularity. Arthur Eddington's coordinate transformation of this system demonstrates that its singularity at two times big G times mass over c squared is a coordinate artifact. Birkhoff's theorem states the uniqueness of, for 10 points, what spherically symmetric solution to the Einstein field equations that corresponds to an uncharged, non-rotating black hole?

ANSWER: **Schwarzschild** metric [or **Schwarzschild** solution or **Schwarzschild** black hole; prompt on “**black hole**” or “**spherically symmetric black hole**”]

16. Hypoplasia of this structure can be diagnosed by noting a DD to DM ratio less than 0.35. Because it can cause inflammation of this structure in children under 6, ethambutol is avoided to treat TB in that age group. A disease in which this structure becomes inflamed is caused by autoantibodies to aquaporin-4. An increase in intracranial pressure can be diagnosed by the swelling of the “head” of this nerve, which is also called its namesake “disk”; that swelling is called papilledema. The superior colliculus and lateral geniculate nucleus eventually receive input from this nerve, which decussates at a structure that can be compressed by large tumors in the pituitary gland, its namesake chiasm. A mitochondrial disease named for Leber affects this nerve, which receives axonal projections from retinal ganglion cells. For 10 points, name this cranial nerve that carries visual signals from the eye.

ANSWER: **optic** nerve [or cranial nerve **II** or CN **II** or CN**2**]

17. The man who performed this experiment had a student, Franklin Silverman, who later wrote a report about its methods, including an interview with one of its participants, Mary Korlaske Nixon. This experiment was also written about by Jim Dyer, who was forced to resign because he unethically posed as a grad student to do research. This experiment was designed to provide evidence for the “diagnosogenic theory” of its formulator, who discussed that theory in his book *People in Quandaries*. This experiment’s 22 participants were divided into those who received “positive therapy” and those who received negative treatment, all of whom were brought to the University of Iowa from the “Soldiers’ and Sailors’ Orphans Home.” In 2007, its participants were awarded a settlement of \$925,000 for emotional damage. For 10 points, name this experiment conducted by Mary Tudor under Wendell Johnson’s supervision to understand the origin of stuttering.

ANSWER: the “**Monster** Experiment” or the “**Monster** Study” [accept descriptions of the experiment that include **stuttering** before it is mentioned; prompt on answers that do not mention “stuttering” but include one of “Wendell Johnson”, “Mary Tudor”, “the University of Iowa”, or “orphans” before they are mentioned]

18. Henry II of Cyprus was exiled to a kingdom of these people by his brother Amalric in 1306. Morphia of Melitene, the wife of Baldwin II, was born to a prince of this kingdom. A king of these people sent his older brother Sempad the Constable to negotiate with Mongke Kahn. During the First Crusade, Baldwin of Boulogne was adopted by one of these people named Thoros, from whom he inherited the city of Edessa. These people, once ruled by kings named Oshin and Hethoum, set up a kingdom led by the Rubenid dynasty before losing power to the Lusignans. That kingdom of these people was ruled by several “Lords of the Mountains,” starting with Leo I. Their best-known king, who ruled much earlier, was a member of the Artaxiad dynasty, who cemented an alliance by marrying Cleopatra, the daughter of Mithridates VI. That ruler was Tigranes the Great. For 10 points, identify this group of people who live in a modern-day country with capital at Yerevan.

ANSWER: **Armenians** or just Armenia [accept **Cilicians** or **Kilikians** or “Cilician Armenians”]

19. A shot in a film directed by this man features a man playing a melancholy tune on a recorder as a woman soaks a cube of sugar in her coffee. Another of this man's films begins with a series of shots tracing the wires through which a phone call propagates before following a conversation between a model and her boyfriend. In one of this man's films, a tear rolling down a widow's eye ends a montage that is scored with the "Song for the Unification of Europe" by this man's regular collaborator Zbigniew Preisner. A series of films directed by this man ends after seven of the main characters survive a ferry accident on a shot replicating the Irene Jacob-played Valentine's chewing gum poster. The first of those films by this man opens with a car accident killing the composer Patrice de Courcy and his daughter, leaving Juliette Binoche's Julie to grieve for them. For 10 points, the miniseries *The Decalogue* and a trilogy consisting of the films *Blue*, *White*, and *Red* were directed by what Polish filmmaker?

ANSWER: Krzysztof **Kieslowski**

20. One story by this author ends with the main character asking for some "fresh blotting-paper" and being unable to remember what he had been thinking about before. In that story, an unnamed boss uses his inkpot to repeatedly torture the title animal, until it dies. A character in one of this author's stories appreciates the "flutey" bit of music played by a band that is "louder and gayer" than it usually is "because the Season had begun" and notices that its conductor is wearing a new coat. This author of "The Fly" wrote a story which ends with the title character skipping her usual trip to the baker's, going home, and putting a scarf back in its box after she returns from her trip through the Public Gardens. After the death of Mr. Scott, Laura, the protagonist of another of this writer's stories, wants to cancel the title event. For 10 points, name this author of "Miss Brill," who also wrote "The Garden Party."

ANSWER: Katherine **Mansfield**

Tiebreaker: One member of this group was friends with Carl Orff, who refused to help him after his arrest and who, during an interrogation later in life, claimed to be a founding member of this organization. Two members of this group were arrested after a maintenance man spotted them passing out papers in an atrium. A medical student whose last words were "long live freedom," his sister, and their friend were executed by guillotine at Stadelheim Prison as the initial members of this group to be convicted. This group, perhaps named for a novel by B. Traven, had its members tried by Roland Freisler, a judge killed two years later in an attack on Berlin. This group, whose main members included Sophie Scholl and Kurt Huber, distributed six pamphlets including *The Manifesto of the Students of Munich*. For 10 points, name this non-violent Nazi resistance group known by a flowery title.

ANSWER: The **White Rose** [Die Weibe Rose or Weisse Rose]

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### Bonuses

1. The last entry in this trilogy was written first and includes stories about Ludwig Goedecke, a soldier who is buried alive and subsequently revived, as well as the author's manifesto "Disintegration of Values." For 10 points each:

[10] Name this set of three novels, including *The Romantic*, *The Anarchist* and *The Realist*, two of which follow Joachim von Pasenow.

ANSWER: *The Sleepwalkers* [or *Die Schlafwandler*]

[10] *The Sleepwalkers* was written by this German modernist, who fictionalized the final days of a Roman poet in his largely paragraphless novel *The Death of Vergil*.

ANSWER: Hermann Broch

[10] Another book called *The Sleepwalkers* was written by this Hungarian author, best known for describing Nicholas Rubashov's imprisonment in *Darkness at Noon*.

ANSWER: Arthur Koestler

2. Consider a function with "f of x" which is continuous. For 10 points each, answer the following about methods you might use to help compute the function's derivative at various inputs.

[10] The quickest technique for finding the derivative "f prime of x" at point a is this one, where the function is evaluated at "f of a minus h" and subtracted from "f of a plus h" and the result is divided by 2h. Its error is "little o of h squared."

ANSWER: central divided differences

[10] To improve the approximation's accuracy even more, you can use this technique, which makes use of approximations of "f of h" and "f of h over q" to arrive at a fourth-order approximation. Plugging in the results from this technique's fourth-order approximation yields its sixth-order variant.

ANSWER: Richardson extrapolation [prompt on "extrapolation"]

[10] Richardson extrapolation is often used to compute derivatives for use in this method, which gives an approximation for a root "x sub n" as "x sub n minus 1, minus f of x over f prime of x."

ANSWER: Newton's method [or Newton-Raphson's method]



3. The beginning of this kingdom is usually dated to the birth of Fa Ngum, who led an army assisted by Prince Nho. For 10 points each:

[10] Name this kingdom that ruled Laos from about 1356 until 1707, which was once led by the culture king Visoun, and which fought the “White Elephant War” with Vietnam.

ANSWER: **Lan Xang** [or **Lan Xang** Hom Khao, or **Lan Chang** Rom Khao]

[10] This nation’s Toungoo Dynasty encroached on Lan Xang circa 1550, and eventually made it a vassal state. Once home to the Pagan Kingdom, this nation’s more modern leaders have included Ne Win and Aung San.

ANSWER: **Burma** [or Republic of the Union of **Myanmar**]

[10] The prehistory of Laos centers on this plain, where huge stone megaliths may be related to ancient burial rituals over 2000 years in the past. Laotian legend claims that this plain was inhabited by a race of giants led by Khun Cheung.

ANSWER: Plain of **Jars** [or **thon haj hin**]

4. The libertarian Hans-Hermann Hoppe founded a rival group to this society, after becoming convinced it had drifted into socialism. For 10 points each:

[10] Name this society of liberal thinkers founded in 1947 by Friedrich Hayek and named for a Swiss resort destination.

ANSWER: **Mont Pelerin** Society [or the **MPS**]

[10] One of the foremost early members of the Society was this economist, who advised Ronald Reagan and wrote the 1962 book *Capitalism and Freedom*.

ANSWER: Milton **Friedman**

[10] The society’s original name referred to it being influenced by Alexis de Tocqueville and this historian who wrote an unfinished “History of Liberty.” He also remarked that “power tends to corrupt, and absolute power corrupts absolutely.”

ANSWER: Lord **Acton** [or John Emerich Edward Dalberg-Acton, 1<sup>st</sup> Baron **Acton**]

5. For 10 points each, answer the following about traditional religious rituals practiced by Native Americans:

[10] The Anasazi often used these underground rooms for various religious rituals. The *sipapu* at the bottom of them is a hole thought to symbolize where the lizards from “The Third World” emerged.

ANSWER: **kivas**

[10] Zuni religion holds that the first *koyemci* were born after the people of the fourth world committed incest. The *koyemci* held this role, which religious scholar Jean Cazeneuve called the “keeper of tradition.”

ANSWER: sacred **clowns** [or ritual **clowns**]

[10] European tradition influenced this Native American ritual, a purification ceremony taking place in a namesake building in which practitioners are purified by the steam that forms when hot water is poured over stones.

ANSWER: **sweat** lodge

6. The fourth volume of a biography by Leon Edel discusses this event, which causes the protagonist of a 2004 novel to move to a secluded house in Rye, East Sussex. For 10 points each:  
[10] Name this disastrous event, which happens at London's St. James's Theater in 1895. That protagonist misses most of it to attend Oscar Wilde's *An Ideal Husband*, but arrives at it in time to see the crowd in the stalls and gallery hissing and booing.

ANSWER: the **premiere** of **Guy Domville** [accept obvious equivalents like the **first performance** of **Guy Domville**, prompt on partial answers]

[10] The premiere of *Guy Domville* occurs at the beginning of this gay Irish author's novel *The Master*. Father Flood convinces Eilis Lacey to emigrate from Ireland to America in his 2009 novel *Brooklyn*.

ANSWER: Colm **Toibin** (cah-lum toh-been)

[10] The aforementioned protagonist of *The Master* is this real-life American author of *Guy Domville*, whose more famous works include *The Turn of the Screw* and *The Portrait of a Lady*.

ANSWER: Henry **James**

7. This figure was often paired in depictions on temple doors with Mahakala. For 10 points each:

[10] Name this white being who led the army of the Ganas and served as Shiva's *vahana*.

ANSWER: **Nandi**.

[10] As a bull, Nandi was probably acquainted with this goddess, the mother of all Hindu cows. She emerged during the Churning of the Ocean and can sometimes be found following Dattatreya around.

ANSWER: **Kamadhenu** [or **Surabhi**]

[10] Kamadhenu was presumably the mother of the red cows who, along with the dawn goddess Ushas, were freed by this leader of the devas from the Vala cave. This Vedic god used the thunderbolt *vajra* to slay the serpent Vritra.

ANSWER: **Indra** [or **Sakra**]

8. This quantity can be computed by measuring the ratio of the decay rate of a kaon to a muon and muon antineutrino to the decay rate of a pion to a muon and a muon antineutrino. For 10 points each:

[10] Name this quantity, which approximately equals 13 degrees. It represents a rotation of the mass eigenstates of the down and strange quarks to the weak eigenstates of the down and strange quarks.

ANSWER: **Cabibbo angle** [prompt on the "**mixing angle**," accept answers indicating that this is the "first **mixing angle** of the **Cabibbo-Kobayashi-Maskawa** matrix" or the "first **mixing angle** of the **CKM** matrix"]

[10] The cosine of the Cabibbo angle is proportional to the probability amplitude of a down quark transitioning into this type of quark. This quark and the down quark combine to form protons and neutrons.

ANSWER: **up** quark [or **u**]

[10] The Cabibbo-Kobayashi-Maskawa matrix has this property. Because linear transformations represented by this type of matrix preserve the values of inner products, a system with a time-evolution operator with this property ensures that the sum of the probabilities equals 1.

ANSWER: **unitary**

9. IRA volunteer Patrick Magee tried to kill this politician in the Brighton Hotel Bombing. For 10 points each:

[10] Name this politician whose ruthless attempt as Education Secretary to deprive school kids of nutrition led Edward Short to christen her the “Milk Snatcher.” She was better known as the “Iron Lady.”

ANSWER: Margaret Hilda “Maggie” **Thatcher**

[10] Thatcher was violently opposed by this former head of the National Union of Miners, who called for the 1984-85 miners strike without balloting the union. He also initiated the miners’ strikes that led to the downfall of Edward Heath’s government in 1974.

ANSWER: Arthur **Scargill**

[10] Thatcher’s stance during the Falklands War won her the enmity of this dictator of Argentina, the head of Intelligence Battalion 601 who was removed from power a few days after the capture of Stanley, the capital of the Falklands.

ANSWER: Leopoldo Fortunato **Galtieri** [or Leopoldo **Galtieri** Castelli]

10. Name some composers who used organs in their symphonies, for 10 points each.

[10] This man collaborated with his student Albert Schweitzer on an annotated edition of Bach’s organ works. He wrote ten organ symphonies, the fifth of which ends with a namesake toccata often as recessional music at weddings.

ANSWER: Charles-Marie **Widor** [or Charles-Marie Jean Albert **Widor**]

[10] This composer’s single-movement third symphony includes an organ as well as 15 trumpets. He gained renown for his ballets *Spartacus* and *Gayane*, the latter of which contains the famous “Sabre Dance”.

ANSWER: Aram **Khachaturian** [or Aram Il’yich **Khachaturian**; or Aram **Xacatryan**]

[10] This English composer liked the organ so much, he included it in his second and fourth symphonies. He’s probably best known for the symphonic poem *Tintagel*.

ANSWER: Arnold **Bax** [or Arnold Edward Trevor **Bax**]

11. Name these lakes listed among the Top Hundred American Fishing Destinations, according to *Bassmaster* magazine, for 10 points each.

[10] This largest freshwater lake in the state of Florida sits in a geological trough formed by the Kissimmee River valley and the Everglades.

ANSWER: Lake **Okeechobee** [prompt on “The Lake” or the “Inland Sea” or “The Big O” which are apparently silly things Floridians call it]

[10] This largest lake in Alaska is drained into Bristol Bay by the Kvichak River, and is home to a namesake lake monster that may in fact be a sneaky population of white sturgeon.

ANSWER: **Iliamna** Lake [or Lake **Iliamna**]

[10] This lake of northern Minnesota is bordered on the south by Voyageurs National Park. A river of the same name runs west from this lake, through the town of International Falls, and then enters the southern end of the Lake of the Woods.

ANSWER: **Rainy** Lake

12. This man coined the term “McCarthyism” in one of his political cartoons, and showed a politician crawling out of a sewer with a suitcase in *Here He Comes Now*. For 10 points each:  
[10] Name this *Washington Post* political cartoonist who drew two detectives following a bunch of footsteps to the White House in his cartoon *Strange—They All Seem to Have Some Connection with This Place*.

ANSWER: **Herblock** or Herbert Lawrence **Block**

[10] Herblock drew *Strange—They All Seem to Have Some Connection with This Place* days after this hotel was broken into in 1972 and months before Bob Woodward and Carl Bernstein released their article implicating the Nixon administration in the break-in.

ANSWER: **Watergate** Hotel

[10] Another iconic political image, the poster of Uncle Sam pointing with the words “I Want You,” was created by this illustrator in 1917. He also wrote the autobiography *Roses and Buckshot*, and created a notable portrait of Jack Dempsey.

ANSWER: James Montgomery **Flagg**

13. In one story in this collection, the spirit of a samurai rips of the ears off of the title blind minstrel, because his friend had forgotten to paint symbols from the *Lotus Sutra* on his body. For 10 points each:

[10] Name this collection that mostly consists of Japanese ghost-stories such as *Hoichi the Earless*.

ANSWER: **Kwaidan**: *Stories and Studies of Strange Things* [pronounced like “kaidan”]

[10] Lafcadio Hearn’s *Kwaidan* includes the first description of a Japanese woman made of this substance. This substance also titles a Yukio Mishima novel in which Kiyooki has a forbidden love for Satoko.

ANSWER: **snow** [or **yuki**; accept *Spring Snow*]

[10] Hearn was born in this country. Other writers from here include a man who fictionalized the dying moments of Jesus Christ on the cross in *The Last Temptation of Christ*, Nikos Kazantzakis.

ANSWER: **Greece** [or the **Hellenic Republic** or **Hellas**]

14. For 10 points each, answer the following about the philosopher Friedrich Schleiermacher.

[10] Schleiermacher wrote a work drawing on this contemporary German philosopher’s *Treatise on the Origin of Language* to argue that language does not have a “divine origin”.

ANSWER: Johann Gottfried **Herder** [Johann Gottfried von **Herder**]

[10] Schleiermacher also wrote this work, which urges its listeners to “seek these heavenly sparks that arise when a holy soul is stirred by the universe.” This set of speeches is addressed to Enlightenment *philosophes*.

ANSWER: **On Religion**: *Speeches to Its Cultured Despisers* [or **Über die Religion**: *Reden an die Gebildeten unter ihren Verächtern*]

[10] Schleiermacher also wrote a philosophical analysis about “The Life of” this man.

“Historical” approaches to the life of this water-walker from Nazareth try to piece together the veracity of his acts.

ANSWER: **Jesus Christ** [accept either underlined answer]

15. Because animals lack the enzymes to convert acetyl-CoA into oxaloacetate, they are incapable of net conversion of these molecules into glucose. For 10 points each:

[10] Name these molecules which are broken down in beta-oxidation, producing about seven molecules of ATP per carbon. Three of them are connected to glycerol in a triglyceride.

ANSWER: **fatty acids** [prompt on “fats” or “lipids”]

[10] Fatty acid synthesis in mammals involves a family of enzymes called elongases repeatedly adding ethyl groups, while these enzymes, such as FADS1 in humans, add double bonds at specific locations in the chain.

ANSWER: **desaturases**

[10] FADS 1 and 2 share EC category 1.14 with dozens of enzymes in this hemeprotein family. Enzymes from this highly conserved family are responsible for most catalytic steps in steroid biosynthesis and drug metabolism.

ANSWER: **cytochrome P450** [or **CYP**, accept more specific answers like “**cytochrome p450** monooxygenase” prompt on “**cytochrome**”]

16. The undercover spy Patrick Honoré Bégearss appears in this opera, which features a libretto by William Hoffman and was described by its composer as a "grand opera buffa". For 10 points each:

[10] Name this John Corigliano opera. It includes an opera-within-an-opera based on *La Mère coupable*, staged to cheer up the spirit of Marie Antoinette, who is sad about getting guillotined.

ANSWER: *The **Ghosts of Versailles***

[10] This character appears in the opera within *The Ghosts of Versailles* as an ambassador from Spain who seeks to rescue Marie Antoinette. He sings the aria "Ecco ridente in cielo" in one operatic appearance and repeatedly shouts "no!" before the sight of a ring prompts him to sing "Contessa perdono" in another.

ANSWER: Count **Almaviva** [prompt on "the **Count**"]

[10] Almaviva appears in both Mozart's *The Marriage of Figaro* and this Italian composer's *The Barber of Seville*. His other operas include *The Thieving Magpie* and *William Tell*.

ANSWER: Gioachino **Rossini** [or Gioachino Antonio **Rossini**]

17. A local sheriff realizes that this character left her diner to have sex with Carl after Carl leaves his boots outside the door of the room in which they are having sex. For 10 points each:

[10] Name this character who, at the end of the play in which she appears, explains to her waitress Elma that “lots of old fogies like him just can’t let young girls alone”.

ANSWER: **Grace Hoylard** [accept either]

[10] Grace, Carl, and Elma are characters in *Bus Stop*, a play by this American playwright. This playwright also wrote about Hal Carter’s relationship with Madge Owens in his Pulitzer Prize-winning play, *Picnic*.

ANSWER: William Motter **Inge**

[10] Inge expanded his first play, *Farther Off From Heaven*, into this 1957 drama about the Flood family, whose members include the cowardly Sonny, the extremely shy Reenie, the distant Cora, and the now-unemployed Rubin.

ANSWER: *The **Dark at the Top of the Stairs***

18. Because a 1347 Golden Horde siege of this city bombarded it with disease-ridden corpses, many historians believe civilians fleeing this city brought the Black Death to Europe. For 10 points each:

[10] Name this city now known as Feodosia, a port town owned by Genoa on the Black Sea in Crimea.

ANSWER: **Caffa** [or **Kaffa** or **Keefe**]

[10] The first quarantine hospital, Lazarete, was established at this modern city, at the time known as the Republic of Ragusa. This city on the Dalmatian Coast was granted significant independence by the 1358 Treaty of Zadar.

ANSWER: **Dubrovnik**

[10] Both of the aforementioned plague towns, and many others, hosted communities of these religious people who were named for the fact that they would whip themselves while Geisslerlieder folk songs were playing, and then soak up the ensuing blood with relics.

ANSWER: **Flagellants**

19. A bird symbolizing the soul of Jesus flies upwards in a painting by this artist depicting Christ sitting on a destroyed throne with fake Hebrew writing on it. For 10 points each:

[10] Name this Venetian artist of *Meditation on the Passion* who is probably best known for a series of nine paintings that includes *Arrival of the Ambassadors* and *Meeting with the Pilgrims of the Pope in Cologne*.

ANSWER: Vittore **Carpaccio** [the most delicious painter of all]

[10] That series, *The Legend of St. Ursula*, was inspired by an entry in this compilation of hagiographies by Jacobus de Voragine, which was a common source of inspiration for many Renaissance artists.

ANSWER: the **Golden Legend** [or **Legenda aurea**; or **Legenda sanctorum**]

[10] Carpaccio painted a winged one of these animals representing St. Mark for the Doge's palace. One of these carnivores investigates the title figure in Henri Rousseau's painting *Sleeping Gypsy*.

ANSWER: a **lion** [or **leone**]

20. This field of supramolecular chemistry deals with complexes of two or more molecules that bind through non-covalent interactions. For 10 points each:

[10] Name this field of chemistry that uses molecules such as crown ethers, calixarenes, and carcerands to form its namesake complexes.

ANSWER: **host-guest** chemistry

[10] One type of host molecule popularized by Steven Zimmerman is known by this term, coined by Howard Whitlock. These noncyclic hosts use two “arms” to bind the guest molecule. An example of this kind of host is the buckycatcher comprised of two corannulene arms.

ANSWER: **molecular tweezers** [or **molecular clips**]

[10] The thermodynamics of host-guest complexes can be modeled using association and dissociation constants, which are examples of this quantity, The “solubility-product” is another example of this quantity.

ANSWER: **equilibrium** constant [or **K-sub-eq**, prompt on “**K**”]