

Tossups

0. **A synthesized version of this instrument carries the main melody of Pavement’s song “Transport is Arranged.” A legal dispute broke out when it was discovered that a part for this instrument in a single from *Business as Usual* was taken from the children’s song “Kookaburra.” A solo for this instrument closes out “You’ve Got to Hide Your Love Away” by The Beatles. Cat Stevens’s song “Katmandu” features a solo for this instrument played by (*) Genesis frontman Peter Gabriel. Bud Frank recorded a solo for this instrument that plays between the verses of “California Dreamin’.” Ian Anderson regularly plays solos for this instrument on “Locomotive Breath” and other songs by Jethro Tull. For 10 points, name this instrument that plays a solo in Men at Work’s “Down Under,” a woodwind instrument pitched slightly lower than the piccolo.**

ANSWER: flute [accept specific types] <AG>

1. **Daniel Axelrod invented one variety of this technique which creates an evanescent wave to eliminate background fluorescence, and is known as its TIRF kind. It’s not spectroscopy, but two photons are shot within a fraction of a femtosecond for the purpose of excitation in one kind of this technique. Osmium tetroxide and aldehydes like glutaraldehyde are common (*) fixing agents in a form of this technique in which one can use a microtome to cut samples. Another form of this technique comes in contact, tapping, and non-contact modes, and employs a tip on a flexible cantilever. Liquid nitrogen is used in the cryo form of this technique which also comes in an atomic force variety, as well as in scanning and transmission types. For 10 points, name this technique that involves shooting a beam of electron to image a sample, and which lets you view small biological objects using the namesake scientific instruments.**

ANSWER: microscopy [accept specifics like atomic force microscopy or electron microscopy; accept word forms like using a microscope; accept total internal reflection fluorescence microscopy or TIRF microscopy before it’s mentioned] <SD>

2. **A stage direction in this play specifies that the face of a woman lying in bed after sex should “have that almost narcotized tranquility that is the faces of Eastern idols.” A woman in this play warns that “In this dark march toward whatever it is we’re approaching... don’t hang back with the brutes!” A man in this play tears a Chinese paper lantern to illuminate the face of his girlfriend. A character in this play always hears a gunshot at the end of the (*) polka tune “Varsouviana,” because she had driven her husband to suicide by confronting him about his homosexuality while it was playing. The third scene of this play is a poker game where Mitch starts a relationship with the protagonist, who loses her family home, Belle Reve, to creditors. For 10 points, name this play in which Blanche DuBois moves in with her sister Stella, written by Tennessee Williams.**

ANSWER: A Streetcar Named Desire <AG>

3. **Two members of this profession killed the taxi driver David Wilkie by dropping a 46-pound block of concrete on his head. Mark Ashton’s LGBT alliance organized a benefit concert for members of this profession. Ernest Bevin lends his name to a group of young men conscripted to work in this profession during World War II. Members of this profession protested after (*) Edward Heath’s Conservative government implemented the “Three-Day Week.” Neil Kinnock’s father was one of many members of this profession who worked in Welsh cities like Tredegar. The NUM led several strikes of these workers, including a year-long one led by Arthur Scargill against the Margaret Thatcher government. For 10 points, name this profession responsible for extracting a major fossil fuel.**

ANSWER: coal miners [accept word forms; prompt on “miners” or “mining”] <KG>

4. A functor has this property if it preserves all small weighted limits. A function with this property on a sequentially compact domain will always obtain its extremal values. The inverse image of an open set under a function with this property is always an open set. Homeomorphisms are functions which have this property and which have inverses with this property. A function f has this property if the sequence $(*) x_n$ converges to x_0 implies that the image sequence $f(x_n)$ converges to $f(x_0)$. A function with this property will attain every number in the range between its endpoints according to the Intermediate Value Theorem. Differentiability implies this condition for functions but not vice-versa. For 10 points, name this property of functions which do not have any “jumps.”

ANSWER: continuous <BM>

5. Susan Haack, a scholar of this thinker, hates Richard Rorty and played this philosopher in a play she wrote about Rorty and him. This thinker discussed how all acts of creation require “recognizing the germs of loveliness in the hateful” in his essay “Evolutionary Love.” He discussed men who “cling spasmodically to the views they already take” and institutions designed to “keep correct doctrines” and “prevent contrary doctrines” as two $(*)$ methods of deciding upon and keeping views and opinions, known as the methods of tenacity and authority. William James and, later, Richard Rorty continued a strain of philosophy largely inaugurated by this philosopher. For 10 points, name this American philosopher who wrote “The Fixation of Belief” and “How to Make Our Ideas Clear.”

ANSWER: C.S. Peirce [or Charles Sanders Peirce] <BM>

6. This book includes instructions for a recitation which is to be made upon offering first fruits. Martin Noth argued that several books of the Bible should be grouped together as a unified history named after this book. In contrast to other books, it includes the rule that sacrifice should only take place in a single sanctuary. This Old Testament book includes the command to “Love the $(*)$ Lord thy God with all thine heart, and with all thy soul, and with all thy might.” Chapter 6, verse 4 of this book states “Hear, O Israel: the Lord our God, the Lord is one,” which is the beginning of the Shema prayer. This book consists largely of a series of speeches recalling events from the life of Moses and discussing the Law of Moses. For 10 points, name this last book of the Torah, which follows the Book of Numbers.

ANSWER: Book of Deuteronomy [or Sefer Devarim] <WN>

7. A G minor piece by this composer in 3/4 time consists of nothing but sixteenth notes played legato from start to finish. Leslie Howard was the first to publish this composer’s first violin concerto in its original and correct key of E-flat major. This composer, whose works were catalogued by Moretti and Sorrento, and are thus assigned “MS” numbers, composed an E major piece in which the A and E strings imitate flutes, and the G and D strings imitate horns. The third movement of his second violin concerto in $(*)$ B minor, marked “Rondo a la clochette,” calls for a bell to precede each restatement of the theme, and provided the melody to Liszt’s etude “La Campanella.” An A minor piece by this composer inspired variations by Brahms and a rhapsody by Rachmaninov. For 10 points, name this composer of 24 caprices for solo violin, a freakishly talented Italian violinist.

ANSWER: Niccolò Paganini <AG>

8. A politician who was tortured under this leader’s regime escaped his country and published a book calling him an “incarnation of evil,” but this leader nonetheless invited him back and appointed him ambassador to the U.S. This man had Evariste Kimba publicly hanged after a show trial. The only legal party during his regime was the Popular Movement of the Revolution, or the MPR. The FNLC tried to overthrow this ruler in the two Shaba invasions. This ruler promoted the wearing of abacosts as part of his $(*)$ decolonization campaign, called *authenticité*, which included the renaming of cities like Leopoldville. He seized power from Joseph

Kasa-Vubu in a coup, a few years after having Patrice Lumumba arrested. For 10 points, name this leopard print hat-wearing longtime dictator of Zaire.

ANSWER: Mobutu Sese Seko [or Mobutu Sese Seko Kuku Ngbendu Wa Za Banga; or Joseph-Desiré Mobutu] <WN>

9. Daisy's recitation of this poem moves the criminal Baxter to tears in the climactic scene of Ian McEwan's *Saturday*. A character yells "Go home and think of your first husband divorced and your second husband killed in a jet and your third husband blowing his brains out" after reading this poem, which causes his wife to lock herself in the bathroom and take sleeping pills, and causes Mrs. Phelps to cry. The title character of a poem based on this one "had read (*) Sophocles in a fairly good translation and caught that bitter allusion to the sea." A pejorative is substituted for the last word in this poem's title in a parody by Anthony Hecht. This poem's speaker says "Ah, love, let us be true to one another!" and compares the world to "a darkling plain ... where ignorant armies clash by night." For 10 points, name this Matthew Arnold poem.

ANSWER: "Dover Beach" <WN>

10. A paper describing one of these places describes how some people there insisted on washing the insides of their shoes even though it turned them hard as stone. A book about these places suggests that a Statue of Responsibility be built to supplement the Statue of Liberty. That book, some editions of which have a postscript making the case for "tragic optimism," advocates for the practice of "paradoxical intention" as a solution to "existential frustration." Experiences in one of these places inspired the development of (*) logotherapy. They are described in "Individual and Mass Behavior in Extreme Situations" by Bruno Bettelheim and *Man's Search for Meaning* by Viktor Frankl. For 10 points, name these places which included Birkenau and Auschwitz.

ANSWER: Nazi concentration camps [or Nazi death camps] <WN>

11. A trinucleotide repeat in this compound's receptor leads to Kennedy's disease, also known as spinal and bulbar muscular atrophy. The drug flutamide competitively binds to this compound's NR3C4 receptor. A compound that is very similar to this one, delta-4 dione, is produced by theca cells. This compound can be converted into a diol via the enzyme aromatase. In 5 α -reductase deficiency, this compound cannot be converted to its more potent (*) dihydro- form. This compound and one of its precursors, DHEA, are produced in Leydig cells in the presence of LH. Sertoli cells produce a binding protein for this hormone to concentrate it. A low amount of this hormone can lead to gynecomastia, the abnormal production of breast tissue. For 10 points, name this sex hormone, an androgen that promotes secondary sexual characteristics in males.

ANSWER: testosterone [accept dihydrotestosterone; accept 5 α -testosterone; accept androstenedione or delta-4 dione until "delta-4 dione" is read; prompt on androgen until mentioned] <SD/AG>

12. A character in this play sees beings "thick as the sands of the sea" "gliding between the lines" of a newspaper. A Parisian doctor in this play uses the word "vermoulu" when describing how its protagonist possessed "something worm-eaten" since his birth. This play ends with that character repeating the words "The sun, the sun." In this play, Jacob is described as being "very careless with (*) matches," foreshadowing a fire that destroys the orphanage he is building. That fire was supposedly started by Pastor Manders, whose advice convinces its protagonist's mother to stay with her syphilitic husband. For 10 points, name this play that ends with Oswald Alving's mother about to euthanize him, written by Henrik Ibsen.

ANSWER: Ghosts [or Gengangere] <KG>

13. A 1997 book-length study of these poems observes how their last lines recycle earlier words, creating "couplet ties." In one of these poems, the speaker asks that the "keen teeth" be "plucked from the lion's jaws" by "devouring time." The speaker of another of these poems describes a "man right fair" and a "woman

colour'd ill" as "two spirits" that represent his "comfort and despair." Helen Vendler wrote a book about the "art" of these poems, one of which concludes that "love is not (*) love / Which alters when it alteration finds." One of them observes that "rough winds do shake the darling buds of May," and ends with the couplet "So long as men can breathe and eyes can see, so long lives this, and this gives life to thee." For 10 points, name these 14-line poems, such as one that starts "Shall I compare thee to a summer's day?"

ANSWER: William Shakespeare's sonnets <AG>

14. This artist included bloodstains on the frame of a painting of a mutilated woman, whose title comes from the words of her murderer. This artist of *A Few Small Nips* obscured Hampshire House with wispy clouds in a painting commissioned by Clare Boothe Luce. In a painting by this artist, a skyscraper emerging from a volcano, among other things, emerges from a bathtub. A (*) pelvic bone, and orchid, and a snail are three of the six objects attached to this artist in a self-portrait set at a hospital. This artist of *What the Water Gave Me* and *The Suicide of Dorothy Hale* symbolized the bus accident she experienced at age eighteen in *The Broken Column*. This artist wears a thorn necklace and hummingbird in one of her many self-portraits. For 10 points, name this unbrowed wife of Diego Rivera.

ANSWER: Frida Kahlo <KG>

15. Plutarch claims Hercules gave Omphale one of these items that thus became a sacred sign of Lydian kingship. Pan-gu used one of these objects to separate the Earth from the Sky. After first dreaming about a meteorite, Gilgamesh dreamt of one of these things that he was unable to lift, prophesying the coming of Enkidu. Another of these objects cut (*) Shiva on the forehead when used by a man who would later kill all the Kshatriyas 21 times. After a beggar shoots an arrow through holes in twelve of these objects, he reveals himself as Odysseus. Parashurama was an avatar of Vishnu often called Rama with one of these objects. In another story, one of these carved out the Grand Canyon while being dragged along the ground by a giant lumberjack. For 10 points, name this weapon carried by Paul Bunyan.

ANSWER: axes <SD>

16. In his *Reminiscences*, the Irish tenor Michael Kelly described fighting the composer of this opera for the right to stutter when performing his role. This opera includes a B-flat major excerpt for oboe, bassoon, and strings in which two sopranos trade lines until both sing "certo, certo il capira" in unison. A character from this opera threatens to "play the guitar for you" if "you want to dance" in its aria (*) "Se vuol ballare." A trouser role in this opera abandons the chair he was hiding behind when the antagonist arrives with the music teacher Basilio, and is mockingly advised to lay off women in the aria "Non piu andrai." A woman in this opera resists the advances of Cherubino and tries to stop her husband from seducing his maid Susanna. For 10 points, name this opera about the wedding day of the servant from *The Barber of Seville*, by Mozart.

ANSWER: *The* Marriage of Figaro [or *Le nozze di Figaro*] <AG>

17. An incident that took place in this city was allegedly foreseen by tennis doubles champion Edwin Fischer, later found to be insane. The perpetrator of that event in this city is thought to have been an anarchist named Mario Buda. The accidental detonation of a nail bomb in this city killed three members of the radical Weathermen organization. An unsolved airport bombing in this city was thought to have been the work of Croatian nationalists, such as (*) Zvonko Busic, who hijacked a flight from this city to Chicago. George Metesky's actions in this city led him to be called the Mad Bomber. Ramzi Yousef was one of the architects of a plan to blow up a building in this city in 1993 that was eventually destroyed years later. For 10 points, name this city where terrorist attacks in September 2001 destroyed the World Trade Center.

ANSWER: New York City <SD>

18. This state's northeastern city of Decorah is home to an impact crater where a five-foot-long sea scorpion fossil was discovered in September 2015. A "University of Management" in this state teaches Transcendental Meditation and is located near a Maharishi Vedic City in Fairfield. This state's eastern and western borders are formed entirely by rivers. One of the first settlements in this state was founded by fur trader Julien (*) Dubuque near some lead mines. This state's Madison County is famous for its many covered bridges. A baseball diamond in this state was built for the movie *Field of Dreams*. For 10 points, name this heavy producer of corn, a midwestern U.S. state where the first presidential caucuses are held in cities like Ames and Des Moines.

ANSWER: Iowa <KG>

19. Polchinski extended work on chaotic behavior from eternal versions of these objects to show that they may have an anomalous energy flux. A proposed solution to a problem in which these objects can turn pure states into mixed states is summarized in the phrase $EPR=ER$. In 2015, three researchers used BMS super-translations to solve a problem about how the formation of these objects violates S-matrix unitarity. Those problems are their firewall paradox and their (*) information paradox. They are characterized by mass, charge, and angular momentum only. Energy may be extracted by rotating ones via the Penrose process, and those rotating ones are described by the Kerr metric. For 10 points, name these objects which are formed when mass is compressed to within its Schwarzschild radius.

ANSWER: black holes <BM>

20. This city lost much of its autonomy after losing the Battle of the Shelon River. Over a thousand birch-bark letters were excavated in this city, including one that uses the Karelian language. This city was home to the easternmost *kontor* built by the Hanseatic League. The marshes surrounding this city caused Batu Khan's invading Mongols to spare it. Pimen was an archbishop of this city, who was deposed during a violent 1570 attack by (*) Ivan the Terrible's oprichniki. This city's St. Sophia Cathedral is home to the bones of Yaroslav the Wise. A coalition led by this city won a battle against the Livonian Order over the frozen Lake Peipus. A ruler named Oleg moved the capital of the Rus from this city to Kiev. For 10 points, name this city led by Alexander Nevsky that includes the word "Veliky," or "great," in its name.

ANSWER: Veliky Novgorod [do not accept "Nizhny Novgorod"] <KG>

Tiebreaker: The penultimate shot of one of this director's films is a seven-minute-long tracking shot starting in a hotel room, going out the window, and turning around and going back into the hotel room. Another of his films ends with Daria imagining a fancy house in the desert exploding, causing food and other things to fly in slow motion. A mimed (*) tennis match ends another of his films, which is about a photographer who thinks he has witnessed a murder. This director of *The Passenger* and *Zabriskie Point* made a "Trilogy of Alienation" beginning with a Monica Vitti-starring film about a woman who disappears on a boating trip. For 10 points, name this Italian director of *Blowup* and *L'Avventura*.

ANSWER: Michelangelo Antonioni <WN>

MLK 2016: Amusing Subtitle

Packet 1

Bonuses

1. Various people have been criticized for replacing the first word of this slogan with "all." For 10 points each: [10] Name this three-word slogan inspired by the deaths of people like Trayvon Martin at the hands of law enforcement officers.

ANSWER: black lives matter

[10] In July 2015, this woman was found hanged in her Texas jail cell, having been arrested after being pulled over for a traffic violation.

ANSWER: Sandra **Bland**

[10] This leader of the Black Lives Matter movement and member of We The Protestors often works with Johnetta Elzie and is known for the blue Patagonia jacket he likes to wear.

ANSWER: DeRay **Mckesson** <WN>

2. These objects were personified by the four deities Imsety, Duamutef, Hapi, and Qebehsenuef, who each also had a companion goddess to protect them. For 10 points each:

[10] Name these four objects personified by the four sons of Horus, each of one was meant for a different organ.

ANSWER: **canopic jars** [prompt on just “**jars**”]

[10] Duamutef, the personification of the canopic jar for the stomach, was protected by this goddess of hunting and weaving. In some traditions, she was considered the mother of Sobek.

ANSWER: **Neith** [or **Neit**; or **Nit**; or **Net**]

[10] Duamutef had the head of this animal, as did the underworld deity Anubis.

ANSWER: **jackal** [prompt on “**dog**” or “**canine**”] <JM>

3. A dark-skinned icon of this figure is housed in Czestochowa, Poland. For 10 points each:

[10] Name this woman often depicted with her child in Christian art.

ANSWER: Virgin **Mary** [or **Madonna**]

[10] The term *spasimo* refers to artistic depictions of the Virgin Mary doing this, such as in Rogier van der Weyden's *Descent from the Cross*. Its depiction in art waned during the Counter-Reformation, since it's not mentioned in the Gospels.

ANSWER: **fainting** [or **swooning** or other synonyms]

[10] Mary does this in Gerard David's *Rest on the Flight into Egypt* and a Jan van Eyck painting in which she's enthroned. Bernard of Clairvaux appears in an unusual variation on this scene.

ANSWER: **breastfeeding** [or **nursing**; or **lactating**; accept Madonna **Lactans**] <WN>

4. This continent is the primary component of the Laurentia craton, and its Morrison formation is a cluster of sedimentary rocks which are rife with fossils. For 10 points each:

[10] Name this continent whose La Brea tar pits have preserved the skeletons of several direwolves.

ANSWER: **North America**

[10] The Morrison formation contains species, such as *Stegosaurus*, *Diplodocus*, and *Apatosaurus*, from this geologic period, which followed the Triassic.

ANSWER: **Jurassic**

[10] This German formation also dates back to the Jurassic. This deposit contains most of the known *Archeopteryx* specimens and is how we know that *Archeopteryx* had feathers.

ANSWER: **Solnhofen** limestone [or **Solnhofen** Plattenkalk] <BM>

5. The Roman name for this sea, *Mare Nostrum*, was adopted by Italian fascists who considered Italy to be the successor to the Roman Empire. For 10 points each:

[10] Name this sea, around which both the Roman and Ottoman empires were centered.

ANSWER: **Mediterranean** Sea

[10] This member of the Annales School, who favored the *longue durée* approach that emphasizes long-term historical trends, wrote a notable history of the Mediterranean. With Claude Lévi-Strauss, he was one of the first professors at the University of São Paulo.

ANSWER: Fernand **Braudel**

[10] Braudel's history of the Mediterranean Sea takes place during the age of this monarch, whose reign saw four state bankruptcies along with his success during the last Italian War, after which he signed the Peace of Cateau-Cambrésis with Henry II.

ANSWER: **Philip II** of Spain <WN/KG>

6. This word means something like "Hark!" or "Listen up!" For 10 points each:

[10] Name this Anglo-Saxon word, which is the first word of *Beowulf*.

ANSWER: **hwæt**

[10] This man's translation of *Beowulf* translates "Hwæt" as "Lo!" His translation was posthumously published with the subtitle "A Translation and a Commentary."

ANSWER: J.R.R. **Tolkien** [or John Ronald Reuel **Tolkien**]

[10] The most popular translation of *Beowulf* is probably that of this Irish poet, whose collection *Death of a Naturalist* includes the poem "Digging."

ANSWER: Seamus **Heaney** [or Seamus Justin **Heaney**] <WN>

7. The DAF-2 gene in *C. elegans* regulates the rate of this process. For 10 points each:

[10] Name this normal biological process that can be slowed by caloric restriction, and is theorized to occur due to free radical damage or the accumulation of mutations.

ANSWER: **aging** [or **senescence**; accept equivalents like **getting older**]

[10] At the cellular level, aging can be explained by the shortening of these repetitive DNA sequences at the ends of chromosomes with each round of replication.

ANSWER: **telomeres**

[10] Longer lifespans are correlated with a decrease in the activity of this serine/threonine kinase, which initiates autophagy with its inhibition. This member of the PI3K family is inhibited by a namesake macrolide drug used to prevent organ transplant rejection.

ANSWER: **mTOR** [or **mechanistic target of rapamycin**; or **mammalian target of rapamycin**; or **FRAP1**; or **FK506-binding protein 12-rapamycin-associated protein 1**; do not accept or prompt on "rapamycin"] <SD/AG>

8. As he was dying in this battle, the skilled lancer Pedro Camejo was accused of cowardice by Jose Antonio Paez, even though he was pretty much in the thick of the fighting. What a dick. For 10 points each:

[10] Name this 1821 defeat of Royalist army commanded by Miguel de la Torre, securing independence for Venezuela.

ANSWER: Battle of **Carabobo**

[10] This winning general at Carabobo was known as "the Liberator" for his role in the independence movements of Venezuela, Ecuador, Peru, Colombia, and a country named for him.

ANSWER: Simón **Bolívar** [or Simón José Antonio de la Santísima Trinidad **Bolívar** y Palacios]

[10] At battles like Carabobo and Boyaca, Bolivar was assisted by the herders living in these grassland areas in Venezuela and Colombia, who were naturally skilled horsemen.

ANSWER: **llanos** [or **llaneros**] <JM/AG>

9. A group of pygmies live eleven days in the past to make up for the eleven days lost when England converted to the Gregorian calendar in this author's novel *Mason & Dixon*. For 10 points each:

[10] Name this reclusive author of *Gravity's Rainbow* and *The Crying of Lot 49*.

ANSWER: Thomas **Pynchon** [or Thomas Ruggles **Pynchon**]

[10] In this piece of writing by Pynchon, he admits that his early stories had "an unacceptable level of racist, sexist and proto-Fascist talk" and that he had a "Bad Ear" before maturing as a writer.

ANSWER: the **introduction** to **Slow Learner** [accept clear equivalents]

[10] The opening line of *Gravity's Rainbow* says that this thing "comes across the sky," referring to a V-2 rocket.

ANSWER: a screaming <WN>

10. This man was appointed to the position of Quartermaster General by James Monroe in 1818, and he would go on to hold that position for a record 42 years. For 10 points each:

[10] Name this man, commonly referred to as the “Father of the Quartermaster Corps,” who also assumed command for part of the Second Seminole War.

ANSWER: Thomas Sidney Jesup

[10] Jesup’s most controversial action was his capture of this famous Seminole leader, who was taken captive when he arrived under a white flag of truce.

ANSWER: Osceola [accept Billy Powell]

[10] The Seminoles were refusing to leave this southeastern US state, which had been ceded to the US in the Adams-Onís Treaty.

ANSWER: Florida <SD>

11. Ernst Rietschel sculpted a monument to these two authors. For 10 points each:

[10] Name these authors who collaborated on the collection *Xenien*, which was a response to their critics.

ANSWER: Johann Wolfgang von Goethe and Friedrich Schiller [accept Johann Christoph Friedrich von Schiller in place of “Friedrich Schiller”]

[10] The aforementioned monument is in this city, which lends its name to a literary movement started by Goethe and Schiller, among others.

ANSWER: Weimar

[10] Goethe wrote this two-part play about a scholar who sells his soul to the devil.

ANSWER: Faust <WN>

12. In 2011 and in 2013, this city’s Philharmonic and Master Chorale premiered both the original and revised versions of the oratorio *The Gospel According to the Other Mary*. For 10 points each:

[10] Name this city, whose Museum of Contemporary Art commissioned the oratorio *Light Over Water*. The stage piece *I Was Looking at the Ceiling and Then I Saw the Sky* is set in the aftermath of an earthquake in this city.

ANSWER: Los Angeles [or LA]

[10] The aforementioned pieces are all by this minimalist American composer of the operas *The Death of Klinghoffer* and *Nixon in China*.

ANSWER: John Adams [or John Coolidge Adams; it’s unlikely that anyone will say this, but do not accept “John Luther Adams,” who is a different composer]

[10] This Venezuelan-born current director of the L.A. Philharmonic conducted the premiere of Adams’s *City Noir*.

ANSWER: Gustavo Dudamel <AG>

13. A dihydrofuran ring is produced in the “oxyarylation” modification of this reaction, whose oxidative version is facilitated by the White catalyst. For 10 points each:

[10] Name this palladium-catalyzed coupling reaction of alkenes with unsaturated halides or triflates in the presence of base.

ANSWER: Heck reaction [or Mizoroki-Heck reaction]

[10] The Heck reaction is extremely similar to the Suzuki coupling reaction, whose last step is a reductive one of these reactions in which two substituents are kicked off a molecule via an E1 or E2 mechanism.

ANSWER: elimination reactions

[10] This other palladium-catalyzed cross-coupling reaction is useful for forming a bond between a nitrogen and aromatic carbon via the reaction of an aryl halide with an amine.

ANSWER: Buchwald-Hartwig reaction <AG>

14. This object may be computed by decimation for the Ising model in one dimension. For 10 points each:

[10] Name this mathematical structure which describes how constants in the partition function change when degrees of freedom are systematically combined, thereby changing the length scale of the problem.

ANSWER: **renormalization group** flow [or **RNG**]

[10] RNG can classify theories into universality classes, which have the same values for this type of exponents. This word also denotes the point above which the liquid and gas state are indistinguishable.

ANSWER: **critical**

[10] Critical exponents characterize the scaling relationship of different observables as one of these is approached.

These phenomenon are absent from the one-dimensional Ising model.

ANSWER: **phase transitions** <BM>

15. Answer the following about the Kulturkampf, for 10 points each.

[10] Bismarck's Kulturkampf targeted this church.

ANSWER: Roman **Catholic** Church

[10] This pope during the Kulturkampf published encyclicals like *Quanta cura* and *Etsi multa*, the latter of which partly blamed Freemasonry for the Kulturkampf and other attacks on the church.

ANSWER: **Pius IX**

[10] This German political party was founded in 1870 to combat the Kulturkampf, and was led by people like Ludwig Windthorst.

ANSWER: Catholic **Centre** Party [or Deutsche **Zentrums**partei] <WN>

16. Lev Shestov's magnum opus is named after these two cities. For 10 points each:

[10] Name these two cities, which represent reason and revelation, respectively, in the work of Leo Strauss.

Tertullian famously asked what these two cities have to do with each other.

ANSWER: **Athens** and **Jerusalem**

[10] Jerusalem is compared to the City of God in this philosopher's book of that name. This philosopher from Hippo also wrote the *Confessions*.

ANSWER: Saint **Augustine** of Hippo

[10] Leo Strauss also discussed the dichotomy between the ancients and moderns, and consider this man to be the first modern philosopher. His major work argued that a quality called *virtù* is necessary for effective leadership.

ANSWER: Niccolò **Machiavelli** <WN>

17. Symptoms of this disorder include hyperarousal and flashbacks and it can be exacerbated by survivor's guilt. For 10 points each:

[10] Name this disorder which frequently affects military personnel and victims of assault.

ANSWER: **PTSD** [or **posttraumatic stress** disorder]

[10] PTSD sufferers may display an unfocused gaze referred to as this kind of "stare." Its name was popularized by a painting by Tom Lea.

ANSWER: the **thousand-yard** stare [or the **two-thousand-yard** stare]

[10] An experimental treatment for PTSD involves playing this game, which can reduce flashbacks following a traumatic event. In an effect named for it, engaging in an activity extensively patterns thoughts and dreams.

ANSWER: **Tetris** <NC>

18. The Victoria and Albert Museum holds this sculptor's marble group *Samson Slaying a Philistine*. For 10 points each:

[10] Name this Flemish sculptor, who depicted a man raising a woman into the air as a second man crouches below the pair in his *Rape of the Sabine Women*.

ANSWER: **Giambologna** [or Jean **Boulogne**; or **Giovanni da Bologna**]

[10] Giambologna sculpted a figure of Neptune for a work of this type in Bologna. The Trevi one in Rome famously appeared in Fellini's *La Dolce Vita*.

ANSWER: **fountains**

[10] The Buckingham Fountain and the Crown Fountain are in this park, whose northwest corner is called Millennium Park. The Frank Gehry-designed Jay Pritzker Pavilion is in this park.

ANSWER: **Grant** Park <JM>

19. Saint John of the Cross reformed this order. For 10 points each:

[10] Name this Catholic religious order, a barefoot branch of which was founded in the late 1500s.

ANSWER: **Carmelites** [accept the **Discalced Carmelites**]

[10] The Carmelites are named after Mount Carmel, which is the site of this second-holiest location of the Bahá'í religion. Designed by the Canadian William Sutherland Maxwell, it is surrounded by terraced gardens.

ANSWER: **Shrine of the Báb**

[10] This prophet is said to have lived in a grotto on Mount Carmel. He ascended to heaven on a chariot of fire.

ANSWER: **Elijah** <WN>

20. This story's enormously powerful title character owns her entire village, and the local families pay her a portion of their crops in exchange for the right to live there. For 10 points each:

[10] Name this short story whose title character puts her nephew Nicanor in charge of her material possessions, and dies in the middle of listing her immaterial possessions.

ANSWER: **"Big Mama's Funeral"** [or **"Los funerales de Mamá Grande"**]

[10] Big Mama's grandmother once faced this character from a 1967 novel, who started 32 failed uprisings against the Conservative regime. He also fathered 17 sons who share his name.

ANSWER: **Colonel Aureliano** Buendía [prompt on **"Aureliano"** or **"Buendía"**]

[10] "Big Mama's Funeral" is by this author, who introduced Colonel Aureliano Buendía in his novel *One Hundred Years of Solitude*.

ANSWER: Gabriel **García Márquez** [do not accept or prompt on **"Márquez"**] <WN>

Extra: Answer the following about a Muslim duty, for 10 points each.

[10] The *janazah*, which is this type of action, is a duty imposed on the entire community, rather than on individuals.

ANSWER: **funeral prayer** [accept **prayer for the dead**]

[10] In general, prayer must be performed this many times a day. There are this many pillars of Islam.

ANSWER: **five**

[10] When Muslims pray, they face towards the Kaaba. The direction in which they face is known by this name. In mosques, niches called mihrabs indicate this direction.

ANSWER: **qibla** <WN>