

ACF Regionals 2017

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1. A character who first appeared in this poem is reimagined as the tribal elder T'kama in a 1993 novel by André Brink couched as that character's "first life." Tethys offers a Ptolemaic (toh-leh-MAY-ik) account of the universe at a feast on the Isle of Love in the penultimate canto of this poem, whose final canto includes a description of the "machine of the world." The actions of a group of men in this poem cause Bacchus to urge Neptune to convene a council of sea gods. Characters in this poem are discouraged by the Old Man of Restelo and menaced by a monstrous personification of the Cape of Good Hope called Adamastor on their way to Calicut. Vasco da Gama's voyage to India is fictionalized in, for 10 points, what poem by Luís de Camões (loo-EES "day" kah-MOH-ens) that serves as the national epic of Portugal?

ANSWER: *The Lusiads* [or *Os Lusiadas*]

2. At a beauty pageant in this city that was held in a basement, a group of women lifted up a banner that read "don't let them kill us!" A cellist in this city performed Tomaso Albinoni's Adagio in G Minor in the ruins of bombed-out buildings. Scars left by mortar shells in this city were filled with red resin to create its namesake "roses." During a siege of this city, injured civilians were evacuated by airlift in Operation Irma. The couple Admira Ismic (ahd-MEE-rah IZ-"mitch") and Bosko Brkic (BOH-sko BURR-kitch) were killed while crossing this city's Vrbanja (vurr-BAHN-yah) Bridge. Painted signs reading "pazi!" (paht-zee), or "watch out!," were common in this city's "Sniper Alley." A nearly four-year siege of this city was lifted by the Dayton Accords. For 10 points, what city, which was besieged from 1992 to 1996 by ethnic Serbs, is the capital of Bosnia and Herzegovina?

ANSWER: Sarajevo (sah-rah-YAY-voh)

3. *R. rubrum* oxidizes this compound with water to make hydrogen. Cytochrome P-450 is named for its max absorbance wavelength when bound to this compound. In the Wood-Ljungdahl (L'YOUNG-"doll") pathway, this compound is methylated and then attacked by sulfur to make acetyl-CoA (uh-SEE-til-KOH-ay). This compound is the lightest product of the reaction that causes bruise coloration; in that reaction, this compound, ferrous iron, and biliverdin form when heme degrades. Like cyanides and azides, this compound inhibits cytochrome c oxidase in the ETC. This compound shifts a plot of "pO₂ (pee-oh-"two") versus percent saturation" way left, which is dangerous because pulse oximetry cannot differentiate it from O₂, even though its affinity is 250 times higher. For 10 points, what poisonous gas competes with oxygen for binding to hemoglobin?

ANSWER: carbon monoxide [or CO]

4. A film from this country opens with a dream sequence in which the title character meets Jane Birkin, who delights the title character by saying that she looks like Birkin's daughter, Charlotte Gainsbourg. This country provides the setting of *In Another Country*, which consists of three episodes in which the same French woman, played by Isabelle Huppert, meets a beach lifeguard. A director from this country filmed a tracking shot along a corridor in which a man fights off an entire gang with just a hammer. That director adapted Sarah Waters's Victorian-era novel *Fingersmith* into this country's colonial era for 2016's *The Handmaiden*. In a film from this country, a man is imprisoned in a hotel room for 15 years before being tricked into sleeping with his daughter. For 10 points, name this home country of *Oldboy* director Park Chan-Wook.

ANSWER: South Korea [or Republic of Korea; or ROK; prompt on "Korea"]

5. A contemporary “renovation movement” named after this man uses his trademark giant cowboy hat as its symbol. “Yank” Levy’s theories of guerrilla warfare were informed by his time serving as a gunrunner for this man’s army in the early 1920s. This supporter of President Juan Bautista Sacasa unsuccessfully worked with Sacasa to limit the power of his country’s Guardia Nacional. At the end of his country’s Constitutional War, this general refused to lay down his arms and instead waged a guerrilla war against the U.S. Marines occupying his country. This man, who was assassinated in 1934 by Anastasio Somoza’s troops, inspired a guerrilla movement led by Daniel Ortega. For 10 points, name this Nicaraguan bandit, the namesake of a socialist party that warred with the Contras.

ANSWER: Augusto César **Sandino** [or Augusto Nicolás **Sandino**; do not accept or prompt on answers mentioning “Sandinista(s)”]

6. The Mishnah states that Rabban Gamaliel posted diagrams of this object to assist the *hediot*, who were people who offered testimony about this object and were asked five questions about it. At a courtyard called Beit Ya’azek (beht yah-ahzek), the proclamation of “mekudash” (meh-koo-dahsh) was issued after the Sanhedrin cross-examined people about this object. Prior to the reforms of Hillel II, a process of “sanctification,” or “kiddush kachodesh” (kih-DOOSH ka-HO-desh) required two people to see this object after its “birth,” or “molad” (moh-lahd). A period known as “Rosh Chodesh” (rohsh HO-desh) begins after this object emerges from conjugation. In the twelfth chapter of Exodus, God speaks to Moses on the first of Nissan and says that each month begins with the emergence of this object. For 10 points, what celestial body’s “new” phase determines the Jewish calendar?

ANSWER: **Moon** [or **Luna**; or **yerah-ah**; or **levanah**; or **sahar**; accept new **moon** or crescent **moon**]

7. In this work, “Knot Taps” are shown graffiti-ing buildings with the outlines of lovers embracing as if vaporized by the blast at Hiroshima. A story-within-a-story in this work describes a man trying to warn his town of attacking pirates from the Black Freighter. The chapters “The Abyss Gazes Also” and “A Stronger Loving World” appear in this work, whose twelfth and final chapter opens with the image of a clock striking midnight with its face covered in blood. Near the beginning of this work, the protagonist investigates the death of the Comedian, which turns out to be the result of a plot instigated by Adrian Veidt (VITE). After failing to stop Ozymandias, Rorschach is vaporized by the blue-skinned superhero Dr. Manhattan at the end of, for 10 points, what serialized graphic novel by Alan Moore?

ANSWER: **Watchmen**

8. A function denoted by this term can be split into upper and lower incomplete functions. For inputs of “one minus x ” and “ x ,” the product of a function denoted by this term satisfies the Euler reflection formula. The sequence of arrival times, but not inter-arrival times, of a Poisson process has a distribution denoted by this term. If the distribution denoted by this term has shape parameter “ n over two” and rate parameter one-half, it is a chi-squared distribution with n degrees of freedom. For an input k , a function denoted by this letter is defined as the integral from zero to infinity of “ x to the k minus one” times “ e to the minus x dx .” A function generalizing the factorial to real and complex arguments is denoted by, for 10 points, what third letter of the Greek alphabet?

ANSWER: **gamma** [accept **gamma** function or **gamma** distribution]

9. Studies for this painting that show a sailor holding a vase at the center and a medical student holding a skull and entering from the left were discussed in a 1972 essay on this painting’s “philosophical” nature, which was written by Leo Steinberg. The artist and his friends joked that two of this painting’s subjects were the artist’s girlfriend and Max Jacob’s (mahks ZHAH-kob's) grandmother. This work, which borrows from its artist’s earlier *Two Nudes*, depicts a woman in the back right who enters through a part in a blue curtain. A pile of fruit sits in the bottom center of this painting, whose two rightmost subjects have facial features inspired by African masks. For 10 points, name this painting by Pablo Picasso that depicts five prostitutes and has a title referencing a French city.

ANSWER: *Les* **Demoiselles d'Avignon** [or *The* **Young Ladies of Avignon**; accept *The* **Brothel of Avignon**]

10. This figure shares his name with an Argonaut who founded the city of Cius (KY-us) after being left near Pegae (peh-"GUY") to help Heracles search for Hylas. According to Appian's *Illyrian Wars*, this figure fathered Celtus, Illyrius, and Galas (KEL-tus, "ill EAR"-ee-us, and GAH-las), each of whom founded a namesake tribe. After this figure threw a boulder near the slopes of Mount Etna, a river god was born from the blood of a youth who was crushed by the falling rock. This figure killed Acis (AY-"kiss") out of jealousy because Acis loved the nymph Galatea. A group of men escaped from this figure by clinging to the bellies of rams as they fled out of his cave. After being blinded by a hot stake, this monster cried that "Outis" (OO-tiss), or "Nobody," had attacked him. For 10 points, what son of Poseidon was a Cyclops who cursed Odysseus with a long voyage back to Ithaca?

ANSWER: **Polyphemus** [or **Polyphemos**]

11. The U.S. negotiated a treaty with this tribe to allow the construction of a mail route that was called, like a more northerly route, the Federal Road. During the Civil War, a chief of this tribe named Opothle Yohola (oh-pohth-lay yo-"HOLE"-uh) led an escape to Kansas called the "Trail of Blood on Ice." This tribe negotiated with the U.S. through Benjamin Hawkins and signed two treaties with the government that were named for Indian Springs. Under the command of Chief William Weatherford, members of this tribe avenged their defeat at the Battle of Burnt Corn by massacring the garrison at Fort Mims. Davy Crockett fought this tribe in a war ended by the Treaty of Fort Jackson. The Battle of Horseshoe Bend was lost by, for 10 points, what tribe whose Red Stick faction fought a war against the U.S. in the 1810s?

ANSWER: **Creek** Confederacy [or **Creeks**; or **Creek** tribe; or **Muscogee**(s); or **Mvskoke**; do not accept or prompt on "White Sticks" or "Red Sticks"]

12. This author warned of an enemy who knows "your heart is luminous / in the watched dark" and will "shut the sun" to become "the last Samson of your zodiac" in a poem set "on almost the incendiary eve." This poet wrote that he must enter "the synagogue of the ear of corn" but will not give "any further / elegy of innocence and youth" in a poem that concludes "after the first death, there is no other." This man gave those poems about the London Blitz the titles "Deaths and Entrances" and "A Refusal to Mourn the Death, by Fire, of a Child in London." In another poem, he wrote that "wise men at their end know dark is right" and that "old age should burn and rave at close of day." For 10 points, name this heavy-drinking Welsh poet of "Do not go gentle into that good night."

ANSWER: Dylan **Thomas** [or Dylan Marlais **Thomas**]

13. In this area of law, the *Abercrombie* spectrum favors the use of "fanciful, arbitrary, or suggestive" language, and the *Polaroid* and *Sleekcraft* tests set forth "likelihood of confusion" factors. The recently argued Supreme Court case *Lee v. Tam*, which was at the intersection of this area of law and the Constitution, involved an Asian American rock band called The Slants. In 2012, this area of law was held to be applicable to the red color used for the soles of Christian Louboutin (loo-boo-TAHN) shoes. The disparagement clause of the Lanham Act is the basis for the claim that the Washington Redskins should lose their protection under this area of law. For 10 points, name this area of intellectual property law that protects logos, words, and other forms of expression that companies use to identify their brands.

ANSWER: **trademark** law [accept **trademark** protection; prompt on "**intellectual property** law" or "**IP** law" before "intellectual"]

14. A concerto for this instrument contains a "war" between the alternating keys of F major and E major that is exacerbated by a prominent snare-drum part and that supposedly reflected the bipolar nature of its dedicatee, Aage Oxenvad (AH-geh OX-en-vahd). Claude Debussy wrote his *Premiere Rhapsodie* as an exam piece for students of this instrument at the Paris Conservatory. A concerto for this instrument uses a difficult cadenza to link its first movement back-to-back with its Latin jazz-influenced second movement. Johannes Brahms dedicated two sonatas for this instrument to Richard Muhlfield (REE-"card" MOOL-"felt"). Aaron Copland wrote a concerto for this instrument that was intended for Benny Goodman. For 10 points, what woodwind instrument plays the glissando that opens George Gershwin's *Rhapsody in Blue*?

ANSWER: **clarinet**(s)

15. The mechanism for one type of this process begins with two methanes colliding and forming both a pentavalent (pen-tah-VAY-lent) and a trivalent carbon atom. This process is done in “real time” at atmospheric pressure by passing an inert gas through a needle electrode and keeping only metastable atoms. Another form of it relies on the evaporation of a Taylor cone. Recombination energy is the opposite of the energy for this process. Proteins are always treated to the “soft” form of this process. After being desorbed from the matrix by a laser, analytes undergo this process during MALDI (mahl-dee). This process forms the “M plus dot” species, which then fragments and gets deflected by a magnetic field, during mass spectrometry. For 10 points, name this process by which an atom loses an electron and becomes charged.

ANSWER: **ionization** [or chemical **ionization**; accept electrospray **ionization** or matrix-assisted laser desorption **ionization** or word forms such as **ionizing**; prompt on “mass spectrometry” or “mass spec” or “spectrometry”]

16. A city that fought to protect these people built a trebuchet that squared off against a machine called the “cat,” inspiring a work by Raimon Escrivan (“rye-MOAN” ess-kree-VAHN) in which the two siege engines engage in a mock debate. Folquet de Marselha (“foal”-KAY de mar-“SAIL”) helped set up a convent at Prouilhe (proo-EEL-uh) for women who left this group to become Catholics. Guillaume Bélibaste (gee-YOHN BAY-lee-bahst) was likely the last “perfect” of this group, a status he gained via the *consolamentum* sacrament. An order to “kill them all, for God will know his own” was issued by a papal legate before the residents of Béziers (BAY-zee-eh) were massacred for sheltering these people. Raymond VI (“the sixth”) of Toulouse was their chief ally in Innocent III’s war against them. For 10 points, what heretical group of southern France was targeted by the Albigensian Crusade?

ANSWER: **Cathars** [accept word forms such as **Catharism**; accept **Albigensians** before “Albigensian”]

17. This book contends that, when a man loves a woman, he hates nature and rejects the “human beneath the skin” in a section titled “We Artists.” This book contains the line “I wish to be a yes-sayer” in a section advocating the uncompromising acceptance of reality. Five years after this book was published, its author expanded it to include a fifth section and an appendix of songs. One section of this book begins by noting that, after Buddha’s death, people would show his shadow in a cave for centuries and posits that, “for millennia yet,” people will do the same for another dead figure. The concepts of *amor fati* (ah-“MORE” FAH-tee) and eternal recurrence were introduced in, for 10 points, what Friedrich Nietzsche (NEE-tchuh) book that preceded *Thus Spake Zarathustra* in its use of the phrase “God is dead”?

ANSWER: *The Gay Science* [or *Die Fröhliche Wissenschaft*; or *The Joyful Wisdom*]

18. These phenomena are described using the transverse–traceless gauge, in which one can derive the quadrupole formula. Detectors for these phenomena are described by sensitivity curves for a characteristic strain h over some timescale. These phenomena are generated when the quadrupole moment of a mass distribution changes in time, which is why their best-understood sources are inspiraling binaries. The existence of these phenomena was strongly suspected because the orbital decay of the Hulse–Taylor binary pulsar agreed with the predictions of general relativity. A binary black hole merger led to the LIGO (“lie-go”) experiment’s direct detection of, for 10 points, what phenomena that are the propagation of ripples in spacetime curvature?

ANSWER: **gravitational waves** [accept **gravitational radiation** and **gravity waves**]

19. According to the mythos of these beings, they were “awakened” after Varda finished populating the sky with stars. Beings of this type who saw the Two Trees were known as ones “of light.” These beings were summoned by the Valar to undertake the Great Journey to Valinor, which resulted in their “sundering” into groups called the Avari and the Eldar. In the Second and Third Ages, Oropher and Thranduil (OH-roh-“fair” and THRAHN-doo-eel) were beings of this type who joined the Last Alliance. The Sindar are one race of these beings, who more generally called themselves the Quendi (KWEN-dee). The dwarf Gimli carries on a rivalry with a being of this type who joins the Fellowship of the Ring and uses a bow as his main weapon. For 10 points, what mythical beings in the *Lord of the Rings* universe are exemplified by Legolas?

ANSWER: **elves** [or **elf**; accept more specific answers including the word **elf** or **elves** such as forest **elves**; accept **Quendi** before “Quendi”]

20. A play on this title names Michael Gorra’s literary biography about the “making of an American masterpiece.” Chapter 42 of a novel with this title contains a modernist depiction of a woman’s consciousness as she meditates on her marriage until 4 a.m. A poem with this title refers to the “sky where Watteau hung a lady’s slipper” and asks “what sort of man was Fragonard?” That poem with this title by William Carlos Williams begins “your thighs are appletrees whose blossoms touch the sky.” This is the title of a novel in which Countess Gemini reveals that Patsy is the love child of Madame Merle and Gilbert Osmond, whom the protagonist marries after rejecting the proposals of Lord Warburton and Caspar Goodwood. For 10 points, what title refers to Isabel Archer in a novel by Henry James?

ANSWER: *The **Portrait of a Lady*** [or “**Portrait of a Lady**”; accept ***Portrait of a Novel: Henry James and the Making of an American Masterpiece*** before “novel”]

TB. An inhibitor of calcineurin (cal-sih-NOOR-in) named for this disease’s candidate region suppresses V·E·G·F, which is why people with this disease rarely get solid tumors. A cell adhesion molecule named for this disease in *Drosophila* (druh-SAHF-ih-luh) is a canonical example of alternative splicing. This disease is suggested by low serum levels of the metalloproteinase pappalysin (pap-uh-"LICE"-in). Though it’s neither ALS nor Alzheimer’s, this disease causes overexpression of S·O·D·1 and the amyloid precursor protein. People with this disease often have transverse creases on their hands or white spots on the outside of their irises. The familial form of this disease is caused by a translocation; more commonly, it is caused by a nondisjunction of the smallest chromosome. For 10 points, name this disease, the trisomy of chromosome 21.

ANSWER: **Down** syndrome [or **Down’s** syndrome; accept **DS**; prompt on “**trisomy 21**” or other answers mentioning “**trisomy**” and “chromosome **21**” before “trisomy”]

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Bonuses by Harvard A (Raynor Kuang, Robert Chu, Vimal Konduri, Jiho Park) and Oxford B (Spence Weinreich, Freddy Potts, Aidan Mehigan, George Corfield)

1. In one tract, this thinker explains how the claim that change in an object reveals its true essence led to a “historicist idea of . . . an inescapable essential destiny.” For 10 points each:

[10] Name this philosopher who included the chapter “The Aristotelian Roots of Hegelianism” in his book *The Open Society and Its Enemies*.

ANSWER: Karl **Popper** [or Karl Raimund **Popper**]

[10] Popper claimed that theories can only possess this property if they are falsifiable. A “method” named for this adjective includes steps like formulating a hypothesis and conducting experiments.

ANSWER: **scientific** [accept **scientific** method or word forms such as **science**]

[10] In *The Poverty of Historicism*, Popper uses this word to describe social engineering that attempts to reform existing institutions through small, gradual changes. It is thus contrasted with holistic, or Utopian, engineering.

ANSWER: **piecemeal** [accept **piecemeal** (social) engineering or **piecemeal** (social) engineer(s)]

2. Many instructional videos for this type of instrument have been published by Mamady Keïta (kay-EE-tah). For 10 points each:

[10] Name this general type of instrument, examples of which include the *djembe* (JEM-bay) and *bougarabou*. Human speech patterns can be imitated on the “talking” type of this instrument.

ANSWER: **drums** [accept talking **drums**; prompt on “percussion instruments”]

[10] The *djembe* and talking drum are popular instruments among the Bambara and Mandinka, inhabitants of the western portion of this continent.

ANSWER: **Africa**

[10] This Nigerian multi-instrumentalist combined elements of American jazz with native African music to create the style of Afrobeat. This man, nicknamed the “Black President,” recorded “Water No Get Enemy” for the album *Expensive Shit*.

ANSWER: **Fela Kuti** [accept either underline portion; or Olufela Olusegun Oludotun Ransome-**Kuti**]

3. This legislation created the FBI’s N·I·C·S background check system. For 10 points each:

[10] Name this bill signed into law by Bill Clinton. It was named in honor of Ronald Reagan’s press secretary who took a bullet during John Hinckley’s attempted assassination of the president.

ANSWER: **Brady** Bill [or **Brady** Act; or **Brady** Handgun Violence Prevention Act]

[10] A federal law passed in 1990 required that “gun-free zones” be enforced within 1,000 feet of these locations. Eric Harris and Dylan Klebold committed a 1999 massacre at one of these locations in Columbine, Colorado.

ANSWER: **schools** [accept Gun-Free **School** Zones Act of 1990 or high **schools** or other kinds of **schools**]

[10] Most of the Gun-Free School Zones Act had to be rewritten after this 1995 Supreme Court decision, which ruled that the act’s basis in the Commerce Clause was unconstitutional.

ANSWER: *United States v. Lopez*

4. In this author's play *Bone Songs*, the Explorer and two couples, who are younger versions of the Explorer and his late wife, all cross paths in Antarctica. For 10 points each:

[10] Name this playwright and theater director. He is a frequent collaborator of Wallace Shawn, with whom he co-wrote the screenplay for a Louis Malle (mahll) film in which he and Shawn talk over dinner.

ANSWER: Andre **Gregory** [or Andre William **Gregory**; prompt on "Andre" or "My Dinner with Andre"]

[10] With his company the Manhattan Project, Gregory created an experimental stage adaptation of this English author's novel *Alice in Wonderland*, which was inspired by a girl named Alice Liddell.

ANSWER: Lewis **Carroll** [or Charles Lutwidge **Dodgson**]

[10] In a play by John Logan, a man who once inspired works by this author meets Alice Liddell at a 1932 Lewis Carroll exhibition. This Scotsman wrote the plays *What Every Woman Knows* and *The Admirable Crichton*

(KRY-ton).

ANSWER: J. M. **Barrie** [or Sir James Matthew **Barrie**, 1st Baronet]

5. This particle was first observed based on the ion trail it left in Carl David Anderson's cloud chamber. For 10 points each:

[10] Name this positively charged fermion that is the antiparticle of the electron.

ANSWER: **positron**(s) [prompt on "antielectrons"]

[10] Because the electron and positron are distinguishable particles, Bhabha scattering of them only has contributions from these two channels.

ANSWER: **s** and **t** channels [accept in either order; do not accept or prompt on answers mentioning "u channel"]

[10] In beta-plus decay, a proton is converted to a neutron by the emission of a positron and what type of neutrino?

ANSWER: **electron** neutrino [do not accept or prompt on "electron antineutrino"]

6. If these units can stand on their own as words, they're called "free"; otherwise, they're "bound." For 10 points each:

[10] Name these smallest units of meaning in linguistics. They might be composed of multiple smaller units of sound called phonemes.

ANSWER: **morphemes**

[10] A morphological rule that changes the meaning of a root word using a different form of the same root is described by this term. This process is exemplified by pluralizing "point" to "points," in contrast to word formation, which is exemplified by negating "correct" to "incorrect."

ANSWER: **inflection** [accept word forms such as **inflecting**]

[10] Jean Gleason studied the development of morphological understanding in children using this test, in which she asked children to pluralize the namesake made-up word.

ANSWER: **Wug** test

7. In his review of this novel, Jonathan Lethem (LEE-thum) called its 76-year-old author a young writer of "boundless promise" and argued that, as paranoid art, this novel avoids complacency because it "distrusts even itself." For 10 points each:

[10] Name this novel that is set in the months leading up to 9/11. It follows Maxine Tarnow's attempts to investigate Gabriel Ice's computer-security firm hashslingrz ("hash slingers") for fraud.

ANSWER: **Bleeding Edge**

[10] Lethem compares the *Bleeding Edge* character Horst Loeffler to "Tyrone Slothrop on Wall Street," referencing this earlier Thomas Pynchon novel, whose title refers to the trajectory of V-2 rockets.

ANSWER: **Gravity's Rainbow**

[10] In *Gravity's Rainbow*, Slothrop searches for information about a rocket with this five-digit serial number. The novel ends with Gottfried inside the S-Gerät compartment of this specific rocket as it hits the Orpheus Theatre in Los Angeles.

ANSWER: **00000** ("five zeroes" or "zero-zero-zero-zero-zero") [prompt on "zero"]

8. This man's tomb in Hangzhou (*hahng-joh*) includes statues of the four conspirators who betrayed him, which visitors are encouraged to curse at and spit upon. For 10 points each:

[10] Name this man whose back was tattooed with the message "serve the country with the utmost loyalty." He successfully fought Jurchen invaders in the 1100s until he was betrayed and executed.

ANSWER: **Yue Fei** (*YOO-eh FAY*) [or **Pengju**]

[10] Yue Fei helped defend the "southern" part of this dynasty, which succeeded the Tang. It fell in 1260 to Kublai Khan's Mongol invasion, which established the succeeding Yuan dynasty.

ANSWER: **Song** dynasty [or **Song** Chao; or Southern **Song** dynasty; or Nan **Song** Chao]

[10] This city was the Song capital until the Mongols invaded, forcing the government to flee to Hangzhou. Matteo Ricci discovered an isolated community of Jews living in this city in Henan (*hay-nahn*) province.

ANSWER: **Kaifeng** (*kye-fung*) [or **Bianjing**; or **Dongjing**]

9. Answer the following about mass extinctions in Earth's history, for 10 points each.

[10] According to the Alvarez hypothesis, the Cretaceous–Paleogene extinction resulted from one of these objects impacting Earth, causing the iridium enrichment found at the K–T boundary and leaving a giant crater under the Yucatán Peninsula.

ANSWER: **asteroids** [accept **planetoids**]

[10] As evidenced by the remains of *Chlorobiaceae* (*kloh-roh-bee-AY-cee-"eye"*) bacteria in shallow waters, hydrogen sulfide emissions may have helped cause the extinction between these two periods at the juncture of the Paleozoic and Mesozoic eras.

ANSWER: **Permian** and **Triassic** periods [or **P–Tr** periods; prompt on partial answers]

[10] The conodont ("**CONE**"-uh-dahnt) *Hindeodus parvus* (*HIN-dee-OH-duss PAR-vuss*) is the index fossil that sets the Global Stratotype Section and Point for the Permian–Triassic boundary, as determined by the Meishan (*may-shahn*) section in this geologic basin. The northwest rim of this basin is formed by the Longmenshan (*long-men-shahn*) fault.

ANSWER: **Sichuan** (*sih-shwan*) basin [or **Szechwan** basin]

10. A seminal text from this musical school criticizes traditional orchestras, describing the "ridiculous" sight of "twenty men furiously bent on redoubling the mewing of a violin." For 10 points each:

[10] Name this musical movement whose tenets were laid out in *The Art of Noises*. Experimental instruments called *intonarumori* ("**intone**"-ah-roo-MOH-ree) were used to perform pieces such as one titled "music for 16" of this movement's "noise intoners."

ANSWER: **Futurism** [or **Futurismo**; accept word forms such as **Futurist**; accept **Music for 16 Futurist Noise Intoners**]

[10] *The Art of Noises* was a manifesto of Futurist music written by Luigi Russolo, who, like fellow Futurists Filippo Marinetti and Umberto Boccioni (*boh-chee-OH-nee*), was from this modern-day country.

ANSWER: **Italy** [or **Italia**; or **Italian** Republic; or la Repubblica **Italiana**]

[10] The modern Italian composer Luciano Berio (*loo-chee-AH-no BAY-ree-oh*) composed a piece for this instrument called *Sequenza V* ("five"), which Christian Lindberg performed in a clown costume. An old-timey version of this instrument was called the sackbut.

ANSWER: **trombone**

11. Muhammad chose Bilal to be the first person to say the *adhan*, which calls the faithful to perform this action, making Bilal the first *muezzin* (*moo-eh-ZEEN*). For 10 points each:

[10] Name this action that Muslims perform five times daily as part of a pillar of Islam known as *salat*.

ANSWER: **prayer** [accept forms of the word **praying**]

[10] The first line of the *adhan* is the *takbir*, consisting of the words "Allahu akbar," which is a statement that God has this property.

ANSWER: God is the **greatest** [or God is **greater**; prompt on "**greatness**" or "God is **great**"]

[10] An additional line, stating "prayer is better than sleep," is added to the *adhan* for this first of the five daily prayers, which is performed at dawn.

ANSWER: **fajr** (*fah-jur*) prayer [salat al-**fajr**; or salat al-**fagr**]

12. In the essay “Modernist Painting,” this critic praises a painter for the “flatness” of his works. For 10 points each:

[10] Name this 20th-century American art theorist who lauded the “all over” style of one of his favorite artists, whom he praised for displaying “post-painterly abstraction.”

ANSWER: Clement **Greenberg** [accept K. **Hardesh**]

[10] Greenberg championed the work of this abstract expressionist, who became known for dripping paint directly onto his canvases, such as in *Full Fathom Five*.

ANSWER: Jackson **Pollock** [or Paul Jackson **Pollock**]

[10] Greenberg also championed the work of this abstract expressionist, whose most typical works are solid fields of color interrupted by a single vertical line known as a “zip.”

ANSWER: Barnett **Newman**

13. These barbaric people, led by their chieftain Cniva (NIH-vuh), defeated and killed both Decius and his son Herennius Etruscus (heh-REN-ee-us eh-TRUSS-kuss) at the Battle of Abritus. For 10 points each:

[10] Name these people whose invasion of the Balkans was repulsed at the Battle of Naissus, winning Claudius II his epithet. These people, the subjects of a history by Jordanes, were later crushed by Valens at the Battle of Adrianople.

ANSWER: **Goths** [accept **Visigoths**]

[10] Both Decius’s successor, Hostilian, and Claudius Gothicus died of this epidemic, which was said to have killed as many as 5,000 people a day across the Empire. It is named for the Bishop of Carthage who described it in his writings.

ANSWER: **Plague of Cyprian** [prompt on “plague”]

[10] There is some disagreement over whether the Plague of Cyprian was caused by the same disease as the Antonine Plague, which killed this man’s co-ruler Lucius Verus. This Stoic emperor wrote the *Meditations*.

ANSWER: **Marcus Aurelius** Antoninus Augustus

14. With his younger lover Marc Allégret (al-LAY-gray), this man toured French colonies in Africa a few years after he completed the first French translation of *Heart of Darkness*. For 10 points each:

[10] Name this author of a semi-autobiographical novel about Michel’s attraction to Tunisian boys titled *The Immoralist*.

ANSWER: André **Gide** (zheed) [or André Paul Guillaume **Gide**]

[10] Gide was one of the six collaborators who included essays in this 1949 book. Its contributors all described their disillusionment with, and eventual abandonment of, communism.

ANSWER: *The **God That Failed***

[10] Gide’s autobiography, *If It Die*, takes its title from a verse in this biblical gospel. Chapter 3, verse 16, of this gospel says that “God so loved the world that he gave his only Son, that whoever believes in Him should not perish but have eternal life.”

ANSWER: Gospel of **John** [or Gospel According to **John**; or Book of **John**; accept **Fourth** Gospel]

15. Answer the following about reasons why the Huisgen (HOY-jen) cycloaddition is awesome, for 10 points each.

[10] The reaction, like all click chemistry reactions, is done in this “universal” solvent, which makes it ideal for labeling proteins with nonstandard amino acids.

ANSWER: **water** [or **H₂O**]

[10] The cycloaddition can be done in this style, which means that only a single piece of glassware needs to be used. This term refers to any process in which reactions are done in series all in a single reactor vessel.

ANSWER: **one-pot** synthesis or reaction [or **single-pot**]

[10] Green chemists endorse click reactions for having a low value for this quantity, which is the ratio of waste product to desired product in a synthesis. This common metric can get as high as 100 in the pharmaceutical industry.

ANSWER: **E** factor [or **environmental** factor]

16. According to legend, Elijah Ba'al Shem of Chelm created one of these beings that kept growing stronger, so he reduced it to dust by erasing the aleph from the word *emet* (eh-meht) written on its head. For 10 points each: [10] Name these automata made from clay or mud, the creation of which was the goal of many Jewish mystics who studied the *Sefer Yetzirah* (seh-fer yet-ZEE-rah). Rabbi Judah Loew (YOO-dah LAYV) supposedly created one of them to protect the Prague ghetto.

ANSWER: **golems**

[10] These demon spirits from Jewish mythology were dead souls who entered and possessed the bodies of the living. Rabbi Isaac Luria once instructed a woman to post a *mezuzah* (meh-ZOO-zah) in her doorway to rid herself of one of them.

ANSWER: **dybbuks** [or **dybbukim**]

[10] A group of demons descended from Lilith called *shedim* (sheh-DEEM) are usually described as having the feet of these animals. A legendary creature known as the “king of serpents” was often depicted with the head of these animals.

ANSWER: **chickens** [or **roosters**; or **hens**; or **cocks**; prompt on “birds” or “fowl”]

17. Though tradition holds that the fangs on this family's coat of arms refer to an ancestor who slew a dragon in the Ecsed (eh-CHAY'd) swamps, the family was really founded by Briccius on land granted by Ladislaus IV. For 10 points each:

[10] Name this noble family whose members included a king of Poland–Lithuania named Stephen and a woman who was called “The Blood Countess” for torturing and murdering hundreds of young women at Cachtice (chahk-teet-seh) Castle.

ANSWER: **Báthory** family [or house of **Báthory**; or the **Báthorys**; accept Briccius **Báthory** or Stephen **Báthory** or Elizabeth **Báthory**]

[10] As ruler of Poland–Lithuania, Stephen Báthory fought this war against Ivan the Terrible. Báthory's siege of Pskov in this war prompted Russia to renounce its claims to disputed territories in the Peace of Yam Zapolski.

ANSWER: **Livonian** War

[10] The legend that Elizabeth Báthory bathed in the blood of her virgin victims has led some to assign her vampiric qualities, calling her “Countess Dracula” in reference to this Wallachian prince who impaled many of his prisoners.

ANSWER: **Vlad** III Dracula [or **Vlad** the Impaler; or **Vlad** Tepes]

18. The funny current, caused by the opening of the funny channels, explains why a potential named for these things spontaneously increases even before an action potential fires. For 10 points each:

[10] Name these devices that regulate the heartbeat. The sino-atrial node is said to be the body's “natural” one.

ANSWER: **pacemakers** [accept natural **pacemaker**(s)]

[10] Funny channels are funny because they allow this ion into the cell, even though it's normally at high concentration inside. Voltage-gated channels for this cation open during the depolarization phase of an action potential.

ANSWER: **potassium** ion(s) [or **K-plus** ion(s)]

[10] As a result of the funny current, cardio-myocytes in the S·A node don't have a stable resting potential compared to most other neurons, which conventionally are assigned a resting membrane potential equal to this many millivolts. Any answers within 10 millivolts are acceptable.

ANSWER: **-70** millivolts [accept answers between **-60** and **-80** inclusive; do not accept or prompt on “(positive) 70”]

19. For 10 points each, answer the following about vegetarianism in literature.

[10] This Jewish-American author wrote a book called *Eating Animals* about his own decision to become a vegetarian. He fictionalized his vegetarianism in his novel *Everything Is Illuminated*.

ANSWER: Jonathan Safran **Foer**

[10] This Yiddish writer and avowed vegetarian wrote about the guilt of killing animals in “The Slaughterer.” This author of *The Magician of Lublin* also wrote stories about Gimpel the Fool.

ANSWER: Isaac Bashevis **Singer**

[10] In 1713, this author wrote an essay in the *Guardian* titled “Against Barbarity to Animals,” which lamented the treatment of animals in slaughterhouses. At the beginning of his collected works, he wrote that poetry and criticism are “by no means the universal concern of the world, but only the affair of idle men.”

ANSWER: Alexander **Pope**

20. This party is led by former comedian Beppe Grillo (BEH-pay GREE-loh). For 10 points each:

[10] Name this Eurosceptic (“euro-skeptic”) political party whose popularity contributed to the 2016 resignation of Matteo Renzi. Its name refers to the number of its core tenets, which concern public water, sustainable transport, sustainable development, internet access, and environmentalism.

ANSWER: **Five Star** Movement [or Movimento **Cinque Stelle**; or **M5S**]

[10] The Five Star Movement is a party in this European country, where Paolo Gentiloni became prime minister after Renzi’s resignation.

ANSWER: **Italy** [or **Italia**; or **Italian Republic**; or **Repubblica italiana**]

[10] Renzi’s 2016 constitutional referendum was advised by this American campaign manager, whose strategy failed abysmally. He was Barack Obama’s campaign manager in the 2012 election.

ANSWER: Jim **Messina**

Extra. Mobs took to the streets of this city during the Esquilache (es-“key”-LAH-chuh) Riots, protesting the high price of bread and calling for the king to dismiss his Italian minister, Leopoldo de Gregorio. For 10 points each:

[10] Name this city whose people, despite the aforementioned riots, referred to Charles III as “Rey-Alcalde” (“ray” al-KAHL-day), or “King-Mayor,” for his many public works projects. It is currently the capital of Spain.

ANSWER: **Madrid**

[10] In 1823, France sent the Hundred Thousand Sons of Saint Louis to seize Madrid and restore the seventh Bourbon king of this name, ending the *Trienio Liberal* (tree-AY-nee-oh lee-ber-AHL). His succession by his daughter Isabella II sparked the Carlist Wars.

ANSWER: **Ferdinand** [or **Ferdinand** VII of Spain; or **Fernando** VII de Borbón]

[10] During Francisco Franco’s siege of Madrid, this communist leader proclaimed that “they shall not pass!” You may give either this woman’s real name or her nickname.

ANSWER: Dolores **Ibárruri** (ee-BAH-roo-ree)[or Isidora Dolores **Ibárruri** Gómez; or La **Pasionaria**; or the **Passionflower**]