

## ACF Regionals 2020

Packet C by Berkeley A, Colorado A, and NYU B

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Tossups

1. An author from this country wrote the poem “If They Want Me To Be A Mystic, Fine. So I’m A Mystic,” and wrote “A-hoy-hoy-hoy-hoy!” in his “Salutation to Walt Whitman.” That author from this country defined myth as “the nothing that is everything” in “Ulysses,” a poem collected with “Autopsychography” in *A Little Larger Than the Entire Universe*. That poet from this country prophesied (“PROFF-uh-sighed”) a “Hidden One” in poems from his book *The Message*. In a poem from this country, a cloud materializes into a bearded giant who describes how he was turned into a rock spirit as punishment for pursuing Tethys. A one-eyed poet from this country wrote an epic in which Bacchus helps turn Muslims against an explorer. For 10 points, *The Lusians* is an epic from what home of Fernando Pessoa and Luís Vaz de Camões (“ka-MOISH”)?

ANSWER: **Portugal**

<European Literature>

2. Error-correcting codes described by this term, such as BCH codes, are widely used in “burst” error correction. Detecting this kind of structure in Z-sub-p is necessary for discovering primes in Pollard’s rho algorithm, and can be accomplished by creating “hare” and “tortoise” pointers and checking if they meet. Kruskal’s minimum spanning tree algorithm typically involves discarding edges if a structure with this property is formed. DFS algorithms find structures with this property by locating “back edges” that point to ancestors. Examples of Hamiltonian paths with this property include the [emphasize] *closed* knight’s tour. By definition, both this property and directedness must be [emphasize] *absent* for trees. For 10 points, a path has what property if it starts and ends on the same vertex?

ANSWER: **cyclic** structure [or **circular**; or **circuital**; or **cycles**; or **loops**; accept **cyclic** codes]

<Other Science (Computer Science)>

3. Two enormous works in this medium decorated the main dining room aboard the *SS Normandie*. *The Dream Garden* is a work in this medium designed by Maxfield Parrish. Works in this medium by Howard Ben Tré, Robert Mickelsen, and Marta Klonowska can be found at a museum dedicated to it in Corning, New York. An artist who works in this medium created a huge hanging sculpture for the Bellagio resort in Las Vegas and designed a namesake “garden” in Seattle. The creations of René Lalique in this medium inspired another artist in creating iridescent favrile (“fav-REEL”) works, including his iconic Art Nouveau lampshades. Dale Chihuly (“chih-HOO-lee”) and Louis Tiffany worked primarily in, for 10 points, what material often used to decorate churches in its “stained” form?

ANSWER: **glass** [accept **favrile** glass until read; accept stained **glass**; prompt on **ceramics**; prompt on **mosaic** by asking “what material is used in that mosaic?”]

<Other Arts (Design)>

4. In *The Dark Ground of Spirit*, Sean J. McGrath argues that this thinker was greatly influenced by Schelling’s brand of German Idealism. A book by Paul Robinson presents the criticisms of Frank Sulloway and Jeffrey Masson alongside a summary of this thinker’s ideas. Jean LaPlanche developed this thinker’s notion of “afterwardness.” Norman O. Brown’s *Life Against Death* draws parallels between the works of this thinker and Martin Luther. Biographies of this man by Ernest Jones and Peter Gay are discussed in a book by Richard Webster titled *Why [this man] Was Wrong*. Herbert Marcuse synthesized the thought of Marx and this man in *Eros and Civilization*. Jacques Lacan advocated for a “return to,” for 10 points, what Austrian “father of psychoanalysis?”

ANSWER: Sigmund **Freud** [accept “return to **Freud**”]  
<Social Science (Psychology)>

5. Órla Ryan wrote that a 1950s boom in this crop inspired a highlife song with lyrics like, “If you want to buy cloth, it is [*this crop*].” *Forcipomyia* midges pollinate this crop, which Tetteh Quarshie stole from Spain’s colony on Bioko. In 1905, a Birmingham company sent Joseph Burt to determine if slaves harvested this crop in São Tomé and Príncipe. Long rains in Cameroon’s Konye region prevent farmers from drying this crop after its fermentation. The Ghanaian Kuapa “fair trade” co-op produces this crop, whose harvest by child slaves in Côte d’Ivoire inspired the Harkin–Engel protocol. This crop of genus *Theobroma* is alkalized in the Dutch process. The US banned imports from a British firm that uses this crop in its Creme Eggs. For 10 points, Cadbury uses what crop to make chocolate?  
ANSWER: **cocoa** beans [or **cacao**; or *Theobroma cacao*; prompt on *Theobroma* or mallows; prompt on chocolate by asking “what crop is used to produce chocolate?”] (The early clues are from *Chocolate Islands: Cocoa, Slavery, and Colonial Africa* and *Chocolate Nations: Living and dying for cocoa in West Africa*.)  
<Geography>

6. This ruler installed his skilled treasurer William Edington and Lord Chancellor William of Wykeham as Bishops of Winchester. This intended recipient of the Fieschi (“f’YES-kee”) Letter lavished gifts on his widely-hated mistress Alice Perrers. Jean Froissart (“zhahn frwah-SAR”) recorded the story of six burghers who sacrificed themselves to lift this monarch’s siege of Calais (“cal-AY”), only to be spared execution on the intervention of his wife Philippa of Hainault (“ay-NO”). This king imposed price controls to address a manpower shortage caused by the Black Death in the Statute of Laborers. This ruler names a phase of a conflict during which his troops used the longbow to score victories at Poitiers (“pwaht-YAY”) and Crécy. For 10 points, name this father of the “Black Prince” who ruled England at the start of the Hundred Years’ War.  
ANSWER: **Edward III** [or **Edward of Windsor**; prompt on Edward]  
<European History>

7. An innkeeper in a novel titled for this substance owns a scroll that depicts a ghost who chops off the penises of rapist monks and puts the mutilated penises into a vulva-shaped boat. The protagonist of another novel titled for this substance associates the tinkling of a kettle’s bell with his lover’s feet. A novel titled for this substance introduces the Ayakura and Matsugae (“MA-tsoo-GA-eh”) families. The protagonist feels the Milky Way flowing through him at the end of a novel titled for this substance in which a cocoon warehouse burns down. In that novel titled for this substance, the “ballet expert” protagonist falls in love with the geisha Komako. For 10 points, name this substance that, along with “Spring,” titles a Yukio Mishima novel and, along with “Country,” titles a Yasunari Kawabata novel.  
ANSWER: **snow** [accept *Spring Snow* or *Haru no Yuki*; accept **Snow Country** or **Yukiguni**]  
<World/Other Literature>

8. Infection by *Diphyllobothrium* tapeworms can occasionally cause a deficiency of this molecule. Deficiency of this molecule is the most common cause of a subacute combined degeneration of the spinal cord called Lichtheim’s disease. A deficiency of this molecule causes elevated methylmalonyl-CoA (“methyl-malonyl-co-A”) levels and can be diagnosed with the Schilling test. Approximately 90 percent of patients who have a disease caused by deficiency of this molecule have parietal cell autoantibodies present. Folate supplementation is prescribed to treat a deficiency of this molecule characterized by hypersegmented neutrophils. Defects in intrinsic factor production lead to deficiencies in the absorption of this molecule, causing pernicious anemia. For 10 points, name this cobalt-containing B vitamin.  
ANSWER: vitamin **B12** [or **cobalamin**; prompt on vitamin **B**]  
<Biology>

9. To celebrate his daughter's recovery from paralysis, Philippe de Champaigne depicted two of these people in a 1662 painting usually titled *Ex-Voto*. These people are depicted wearing elaborate crowns in a genre of portraiture from colonial Mexico. A person of this occupation from the Albertoni family is depicted sleeping atop a red marble sarcophagus in a funerary monument. A sculpture of a member of this profession is located in a niche topped by a hidden yellow glass window and is backed by gilded stucco rays. In that sculpture in the Cornaro Chapel, a person of this profession leans back in apparent spiritual pleasure as an angel prepares to stab her with an arrow. For 10 points, name this occupation depicted in Counter-Reformation art like Bernini's *Ecstasy of Saint Teresa*.

ANSWER: **nuns** [or **sisters**; or **abbesses**; or **mothers**; accept Cistercian, Franciscan, or Carmelite **nuns**; prompt on **saints** by asking "what was their earthly vocation?"]

<Painting/Sculpture>

10. A member of this family wrote that proper schools and religious institutions are crucial for a "nation born in a day" being able to reach an "unperverted manhood" in a nativist tract decrying Catholic immigration. The work of an author born into this family inspired William Gilmore Simms to write *The Sword and the Distaff*, while the patriarch of this family wrote a *Plea for the West*. Anthony Comstock began his anti-obscenity crusade after the adultery of a member of this family was exposed by Victoria Woodhull. A member of this family sent rifles to anti-slavery combatants in Bleeding Kansas, which were nicknamed his namesake "bibles." For 10 points, name this prominent abolitionist family that included the minister Henry Ward and Harriet, the author of *Uncle Tom's Cabin*.

ANSWER: **Beecher** [accept **Beecher**'s Bibles; prompt on **Stowe** by asking "what was Stowe's maiden name?"]

<American History>

11. This character watches law students put on a play in which his patron offers "forty virgins" to anyone who will help him get unstuck in the mud. This man names his falcons after his deceased wife Liz and his daughters Anne and Grace, the latter of whom he often remembers wearing the angel wings he made for her. The biographer Diarmaid MacCulloch ("DER-mid muh-CULL-uck") has defended the accuracy of this character's portrayal. A novel opens with this character's father Walter saying "So now get up" after beating him. In 2020, *The Mirror and the Light* will conclude a trilogy about this rival of Stephen Gardiner; the first novel in that series is titled for Jane Seymour's estate and ends with Thomas More's execution. For 10 points, *Bring Up the Bodies* and *Wolf Hall* by Hilary Mantel center on what adviser to Henry VIII?

ANSWER: Thomas **Cromwell**

<British Literature>

12. In his notebooks, Friedrich Nietzsche ("NEE-chuh") credits this earlier thinker with inspiring the concept of Eternal Recurrence through his "long since" argument, which turns on a translation of the word *édê* ("eh-deh"). This thinker's statement that all things must pass into nonbeing as "reparation for their injustice" is analyzed in a Heidegger essay titled for this thinker's "saying." This thinker described the creation of life from mist in the earliest work titled *On Nature*, and claimed that stars were holes poked in a series of concentric rings surrounding the earth. A student of this thinker substituted air for this thinker's fundamental element, which he called *apeiron*, or infinity; that student was Anaximenes ("an-uck-SIM-uh-nee"). For 10 points, name this second philosopher of the Milesian school, a Pre-Socratic student of Thales.

ANSWER: **Anaximander** of Miletus

<Philosophy>

13. The crash of a de Havilland Comet led to early work by Paul Paris studying these phenomena. Gustav Kirsch's equations can be used to calculate when this action occurs in boreholes. Kirsch's equations led to an elliptical solution by Charles Inglis and a calculation by A. A. Griffith in which the strain energy release rate is equal to the change in elastic energy with respect to area of growth. Integrating the Paris-Erdogan law can give an estimate for the number of cycles before this process leads to failure. Opening, sliding, and tearing modes of this phenomenon

were proposed by George Irwin, who also proposed an “R-curve” measuring crack growth resistance. For 10 points, name this process often preceded by necking, in which an object separates into two or more pieces.

ANSWER: **fracture** [or word forms; accept **cracking** or word forms until “crack” is read; prompt on **breaking**; prompt on **failure** until read]

<Physics>

14. Mark Mazower contrasts Marx’s conception of socialist internationalism with this man’s view of an internationalism founded on nation-states. This man served as triumvir (“try-UM-ver”) in a revolutionary government that was defeated after Louis Napoleon intervened in favor of Pius IX (“the ninth”). This man founded a movement with the motto “God and the People” after receiving no reply to a letter that he’d sent to King Charles Albert. This man sought to create a new “Holy Alliance of the Peoples” that could lead to a “United States of Europe” by forming coalitions between revolutionary organizations across Europe. This Carbonari member refused to swear allegiance to the House of Savoy until the capture of Rome, unlike Giuseppe Garibaldi. For 10 points, name this nationalist leader of the Young Italy movement.

ANSWER: Giuseppe **Mazzini**

<European History>

15. “Rivers of flaming fire” issue under one of these objects in a vision from First Enoch 14 (“chapter 14”). A “lying spirit” enters the mouths of prophets after it approaches one of these inanimate objects in Micaiah’s vision from First Kings 22 (“chapter 22”). Colossians 1:16 (“chapter 1, verse 16”) claims that “all things were created by Him and for Him” “whether they be [*these objects*] or dominions or principalities or powers.” Wheel-shaped *ophanim* (“oh-fah-NEEM”) guard one of these objects, which name the third-highest order of angels and are conflated with Ezekiel’s chariot in Merkabah. A text named for one of these objects evokes the “Highest and Greatest,” whose creations “grasp nothing of His knowledge but what He wills.” Verse 255 of the Qur’ānic *sūrah* Al-Baqarah uses this type of object to claim that “the heavens and the earth” fall under Allah’s rule. Popes used one of them called the *Sedia gestatoria*. For 10 points, name this kind of object upon which God sits.

ANSWER: **thrones** [accept the **throne** of God; or al-‘**Arsh**; or **thronoi** or **thronos**; accept the **Throne** Verse or āyat ul-**kursi**; accept **chairs** or **seats** or **sedans**; prompt on the Qur’ān by asking “what object titles that verse of the Qur’ān?”; prompt on **chariots** with “what objects were conflated with chariots?”; prompt on **angels** before it is read]

<Religion>

16. In a paper on this process, Halperin and Nelson proposed the existence of a hexatic intermediate during it. This process occurs as a result of an imaginary phonon frequency leading to vanishing elastic shear modulus in the homogenous Born instability mechanism of this process, which is an alternative to its Lindemann criterion. An analyte is placed into a capillary tube and the range of points at which this process occurs is observed in a procedure for determining sample purity. The temperature at which this endothermic process occurs is minimized in eutectic (“yoo-TEK-tik”) mixtures. The latent heat of fusion is the change in enthalpy as this phase transition occurs. For 10 points, a solid becomes a liquid in what phase transition, the reverse of freezing?

ANSWER: **melting** [or **fusion** until read; accept **melting** point]

<Chemistry>

17. An essay by this author contrasts the tepid remark, “Nice music they’ve got here,” with the vivid daydreams that the music at the New World Cabaret conjures up for the narrator. An essay by this author ends by comparing people to bags of “miscellany,” such as “a key to a door long since crumbled away,” that have been filled by “the Great Stuffer of Bags.” Claudia Rankine’s (“RANK-in’s”) *Citizen* quotes an essay by this author that describes feeling the title attribute most “when I am thrown against a sharp white background.” This author of “How It Feels To Be Colored Me” was repopularized by an Alice Walker essay that describes searching for her unmarked grave. Both of

those essays feature this author's home city of Eatonville, Florida. For 10 points, name this author of *Their Eyes Were Watching God*.

ANSWER: Zora Neale **Hurston**

<American Literature>

18. An Apulian red-figure painter depicted these beings asleep. According to the *Bibliotheca*, Demeter disguised herself as one of these beings to conceive the horse Arion with Poseidon. On a red-figure krater from Paestum, one of these beings hovers over a golden tripod. The Cylonian affair led a cult at the Areopagus ("air-ee-OP-uh-gus") to worship these beings as the Semnai Theai. A respectful title for these beings names a novel about an incestuous SS officer by Jonathan Littell. To distinguish these beings from the Maenads, vase painters gave them wings. Oedipus stops to die at a grove sacred to these beings at Colonus, since they punish household crimes. These beings form the chorus in the *Oresteia*, which calls them "the Kindly Ones." For 10 points, Megaera, Tisiphone, and Alecto are what vengeful spirits?

ANSWER: **Furies** [or **Erinyes**; accept **Eumenides** or the **Kindly Ones** or the **Gracious Ones** or *Les Bienveillantes*; accept **Semnai** Theai until read; accept the **Eumenides** Painter; accept **infernal goddesses** or **chthónioi** theoi]

<Mythology>

19. An unscheduled independence day speech in this country's Palace of the Nation attacked a colonial head of state for calling independence the "culmination of the civilizing mission." Native soldiers in this country mutinied after a colonial commander wrote "Before Independence = After Independence" on a blackboard. Irish troops with a UN contingent in this country were captured by local fighters after resisting a five-day siege at Jadotville. Maoist Simba rebels in this country fought under the umbrella of Pierre Mulele's rebellion. Dag Hammarskjöld ("dog HA-mar-hweld") died in a plane crash en route to negotiations in this country with Moïse Tshombe ("mo-EEZ CHOM-bay"), who had declared the independence of Katanga from this country's Patrice Lumumba-led government. For 10 points, a namesake 1960s crisis wracked what former Belgian colony?

ANSWER: **Democratic Republic of the Congo** [or **DRC**; or **Congo-Kinshasa**; or **Congo-Léopoldville**; or the **Belgian Congo** until "Belgian" is read; prompt on the **Congo**; prompt on **Republic of the Congo** or **Zaire** by asking "what is the country currently called?"]

<World History>

20. David Cooper argues that a piece with this title uses the first five notes of an octatonic scale plus a semitone as a "germinal motif." That piece with this title opens with low strings slowly playing the fourths C-sharp, F-sharp, B, then falling A, E. An F-sharp pedal-point opens another piece with this title that ends with a "passacaglia, toccata, and chorale." Georg Solti ("SHOL-tee") corrected a slow tempo marking in a piece with this title whose fourth movement parodically quotes Dmitri Shostakovich's *Leningrad Symphony*. Polish folklore inspired Witold Lutosławski's piece with this title, which also titles a piece in which two bassoons play together while a minor sixth apart. For 10 points, "Game of Pairs" is the second movement of Béla Bartók's piece with what title, suggesting that it highlights every instrument?

ANSWER: **Concerto for Orchestra**

<Classical Music>

21. A group of infantrymen who helped Captain Moses Harris's cavalry company guard one of these sites became known as the Immortal Fifteen. Robert Underwood Johnson's alarm at "hoofed locusts" prompted him to solicit two articles for *The Century Magazine* that popularized one of these places. A chapter titled "The Eleventh Hour" ends a book about one of these places by a journalist who fought Napoleon Broward named Marjory Stoneman Douglas. The Great Northern Railway promoted one of these places as "America's Switzerland" as part of a railroad campaign to "See America First." To prevent the damming of Hetch Hetchy Valley, John Muir ("myoor")

campaigned for it to be added to a nearby one of these sites. For 10 points, name these protected locations in the United States like Yellowstone and Yosemite.

ANSWER: United States **national parks** [or Glacier **National Park**; or Everglades **National Park**; or Yellowstone **National Park**; or Yosemite **National Park**; or **National Park System** or **NPS**; prompt on parks; do not accept or prompt on “national monument”]

<American History>

## Bonuses

1. The Supreme Court ruled that state governments must respect First Amendment rights by applying this process in *Gitlow v. New York*. For 10 points each:

[10] Name this process by which the rules of the Supreme Court use the Due Process Clause of the Fourteenth Amendment to apply certain parts of the Bill of Rights to state governments.

ANSWER: **incorporation** [or selective **incorporation**]

[10] This Supreme Court Justice believed in total incorporation, the doctrine that the Fourteenth Amendment applied the entire Bill of Rights to the states. This justice authored *Korematsu* and dissented from the right to privacy in *Griswold*.

ANSWER: Hugo **Black**

[10] The Supreme Court incorporated this amendment in 2007 in *McDonald v. City of Chicago*, which overturned a Chicago ordinance that banned handgun ownership.

ANSWER: **Second** Amendment [or Amendment **II**]

<American History>

2. Deborah Nemko argued that a piece in this genre exemplifies its composer's role as "innovator and collaborator" by pointing out its influence on a later D minor piece in the same genre by another composer. For 10 points each:

[10] Name this genre of an 1846 G minor piece, its composer's opus 17. That piece in this genre contains a *scherzo* that features a prominent "Scotch snap" rhythm and opens with the violin playing [read slowly] a half note D, down to a quarter note G, then up to a quarter note D and a long E-flat.

ANSWER: **piano trio** [accept **Piano Trio** in G minor, opus 17; prompt on partial answers]

[10] The Piano Trio in G minor was the only piano trio written by this composer and virtuoso pianist. Her husband, whose first piano trio was influenced by the Piano Trio in G minor, composed the *Spring* and *Rhenish* symphonies.

ANSWER: **Clara Schumann** [or Clara **Wieck**; prompt on **Schumann**]

[10] Clara Schumann inspired and was depicted in "Chiarina" ("kee-ah-REE-na"), the eleventh movement of this set of 21 piano pieces by Robert Schumann that depicts a religious festival.

ANSWER: **Carnaval**

<Classical Music>

3. One work by this philosopher argues that it is wrong to look down upon the Tupinambá people without extending the same scrutiny to European culture. For 10 points each:

[10] Name this 16th-century philosopher who introduced an early form of cultural relativism in his work "Of Cannibals." This thinker discussed his buddy Étienne de La Boétie ("ay-tee-EN duh la bo-ay-SEE") in the essay "Of Friendship."

ANSWER: Michel de **Montaigne** ("mon-TAIN")

[10] Montaigne's pal Étienne de La Boétie wrote *Discourse on Voluntary Servitude*, a political treatise advocating for a form of this political position that rejects hierarchies and calls for stateless societies.

ANSWER: **anarchism** [or word forms like **anarchy** or **anarchist** movements]

[10] In her book *Ordinary Vices*, Judith Shklar called Montaigne the first modern liberal for his commitment to the belief that acting in a way described by this word is the worst thing you can do to someone. In *Contingency, Irony, and Solidarity*, Richard Rorty discusses Nabokov's deployment of this concept.

ANSWER: **cruelty** [or word forms like being **cruel** or acting **cruelly**]

<Philosophy>

4. Immigrants to this country are the subject of Monica Ali's 2003 novel *Brick Lane*. For 10 points each:

[10] Name this country. Kamila Shamsie wrote about the Pasha family's life in this country in her award-winning 2017 novel *Home Fire*.

ANSWER: **United Kingdom** [or **UK**; or **Britain**; or United Kingdom of Great **Britain** and Northern Ireland; accept **England**]

[10] *Home Fire* reimagines Sophocles' play *Antigone* among followers of this religion. Some followers of this religion were infuriated by Salman Rushdie's novel *The Satanic Verses*, leading Ayatollah Khomeini to issue a *fatwā*.

ANSWER: **Islam** [accept **Muslims**; accept more specific answers like **Shia** or **Sunni** Islam]

[10] Shamsie collaborated on a 2010 essay published in *Granta* that details how one “must have” these objects in order to know “How to Write About Pakistan.” Pakistani author Mohammed Hanif wrote a 2008 novel about “A Case” of these objects that are “Exploding.”

ANSWER: **mangoes** [accept *A Case of Exploding **Mangoes***]

<World/Other Literature>

5. “Primitive” or “Hard Shell” Baptists are distinguished in part by their opposition to this practice. For 10 points each:

[10] Identify this practice whose scriptural basis comes primarily from Matthew 28:16–20 (“chapter 28, verses 16 to 20”). A. B. Simpson founded a holiness movement denomination titled for an “Alliance” named in part for this practice.

ANSWER: **missionary** work [accept equivalents like **mission** boards or **missionaries**; prompt on **proselytizing** or **evangelism** or equivalents; accept Christian and **Missionary** Alliance or **C&MA**]

[10] This country's reforming 19th-century president Justo Rufino Barrios invited Presbyterian missionaries in an attempt to weaken the Catholic Church. This country is home to the highest percentage of Protestants in Latin America, including Jimmy Morales, a comedian who was president from 2016 to 2019.

ANSWER: **Guatemala** [or Republic of **Guatemala**]

[10] As part of its mission work, this Christian church built temples in Quetzaltenango and Guatemala City. Male members of this denomination are obliged to become missionaries after training at centers like the one in Provo, Utah.

ANSWER: **Mormon** Church [or The Church of Jesus Christ of **Latter-day Saints**; or **LDS** Church]

<Religion>

6. This method involves solving a pair of coupled linear equations reading  $F C$  equals  $S C$  epsilon. For 10 points each:

[10] Name this type of Hartree–Fock method in which alpha and beta spins have different molecular orbitals. It's not Møller–Plesset (“MOO-ler PLESS-it”), but this method can minimize energy more than a related method because it incorporates additional variational parameters.

ANSWER: **unrestricted** Hartree–Fock method [prompt on **UHF**]

[10] The Hartree–Fock method is used to approximate solutions to this central equation of quantum mechanics, which describes the spatial and time evolution of a wavefunction.

ANSWER: **Schrödinger** equation

[10] The Fock operator contains a term, sometimes also called the permutation operator, named for this interaction between identical particles. This effect for fermions is also called Pauli repulsion.

ANSWER: **exchange** interaction [or **exchange** force]

<Physics>

7. This monarch names a Samvat calendar popular in north India, while his rival or descendant Shalivahana names a calendar popular in South India. For 10 points each:

[10] Name this legendary emperor identified with Chandragupta II. A popular story tells of this ruler's attempt to capture a spirit named Betal (“BAY-tall”), who told him stories while this ruler tried to carry Betal's corpse away.

ANSWER: **Vikramaditya** [or **Vikram**; or **Vikram** Samvat; or Chandragupta II **Vikramaditya**]



[10] Chandragupta II constructed an “Iron” one of these objects in Delhi. An account of his father Samadragupta’s reign is inscribed on one of these objects in Allahabad originally constructed to promulgate Ashoka’s edicts.

ANSWER: **pillar** [or Iron **Pillar**; or Allahabad **Pillar**; or **column**; prompt on “stele”; do not accept or prompt on “rock”]

[10] The Vikram Samvat calendar traditionally begins from Chandragupta II’s conquest of the Western Satraps from these people. These nomadic Iranian peoples share their name with a related culture that also built *kurgan* burial mounds.

ANSWER: **Sakas** [or **Scythians**; or Indo-**Scythians**; or **Shakas**; prompt on Massagetae]

<World History>

8. Ea helps the Hurrian storm god Teshub defeat the stone monster Ullikummi by attacking this body part. For 10 points each:

[10] Name this body part that betrays the supernatural nature of ghostly bhoots (“b’hoots”). The hunter Jara fatally wounds Krishna by shooting an arrow at this body part, which is also a vulnerable spot for Achilles.

ANSWER: **feet** [or a **foot**; accept parts of the foot such as the **heel** or **toes** or **sole**]

[10] A Sanskrit word meaning “one foot” names the flying pigeon yoga pose as well as this one-footed form of Shiva, or of his Bhairava aspect. Many temples in Orissa depict corpses beneath this god, who arose as the Vedic “one-footed goat,” an aspect of Rudra.

ANSWER: **Ekapāda** [accept **Ekapāda**-Trimurti or **Ekapāda**-murti; accept Aja **Ekapada** or Ajai**kapada**; accept **Eka Pāda** Galavasana; accept **Ekapāda** Bhairava]

[10] In Vedic astrology, Aja Ekapada presides over the Pūrva Bhādrapadā nakshatra, symbolized by this weapon. The Pandavas Sahadeva and Nakula both wield this weapon, exemplified by Sang Sapurba’s Cura (“choo-rah”) Si Manjakini and Lê Lợi’s (“lay luh-ee’s”) “Heaven’s Will.”

ANSWER: **swords** [accept **talavaaren**; accept **pedang**; accept Hoàn **Kiểm**]

<Mythology>

9. Answer the following about fluxional (“FLUCK-shuh-null”) processes that are [emphasize] *not* the Berry pseudorotation, for 10 points each.

[10] Bullvalene rapidly tautomerizes via this reaction, which also transforms 3-methyl-1,5-hexadiene into 1,5-heptadiene under the addition of heat.

ANSWER: **Cope** rearrangement

[10] Because the energy eigenstates of this simple molecule’s nitrogen atom are not spatially localized, it undergoes periodic inversion. This is the lightest molecule with trigonal pyramidal geometry.

ANSWER: **ammonia** [or **NH3**]

[10] Cyclohexane rapidly undergoes ring flipping to interconvert between two forms of this conformation in which carbon–hydrogen bonds are staggered, minimizing torsional strain.

ANSWER: **chair** conformation

<Chemistry>

10. This author alluded to the use of the initials H.C.E. in James Joyce’s *Finnegans Wake* with the pseudonyms of the protagonist of his story “Time Considered as a Helix of Semi-Precious Stones.” For 10 points each:

[10] Name this author of *Babel-17*. In reference to *Finnegans Wake*’s cyclical format, the last and first sentences of this author’s novel, set in the ruined city of Bellona, complete the phrase “I have come to wound the autumnal city.”

ANSWER: Samuel **Delany** (That novel is *Dhalgren*.)

[10] Brian McHale has compared *Finnegans Wake*’s structure with that of a story by this author that consists of the words “Once upon a time there was a story that began.” This postmodern author used his home state of Maryland as the setting for the title story of *Lost in the Funhouse*.

ANSWER: John **Barth**

[10] Charles Kinbote imagines lecturing university students about *Finnegans Wake* in *Pale Fire*, a novel by this Russian-American author of *Lolita*.

ANSWER: Vladimir **Nabokov**

<American Literature>

11. Sergei Rachmaninoff was one of this singer's mentors. For 10 points each:

[10] Identify this Russian basso profundo who achieved international prominence for his roles as Mephistopheles in operas by Gounod ("goo-NO") and Boito. This performer's realistic acting style influenced Stanislavsky and transformed acting in operatic productions.

ANSWER: Feodor Ivanovich **Chaliapin** ("shall-YA-pin") [or Fyodor **Shalyapin**]

[10] Chaliapin was particularly known for his performances as Boris Godunov in an opera by this composer. He wrote *Night on Bald Mountain* and *Pictures at an Exhibition*.

ANSWER: Modest **Mussorgsky**

[10] Chaliapin also performed traditional Russian folk songs, most notably a song about men with this profession that was first arranged by Mily Balakirev ("buh-LAH-kee-riff"). That song includes the refrain "ey, ukhnem!", evoking the strain of men working in this profession.

ANSWER: Volga **boatmen** [or **burlaks** or **barge-haulers**; prompt on **sailors**]

<Other Arts (Opera)>

12. Victor of Vita chronicled this kingdom's cruelty towards Nicene Christians in his *History of* [these people's] *Persecution*. For 10 points each:

[10] Name this barbarian tribe that formed a kingdom after capturing the city of Hippo Regius. This tribe, which was divided into the Silingi and Hasdingi, formed an alliance with the Alans while migrating across the Rhine.

ANSWER: **Vandals** [or the **Vandal** Kingdom]

[10] After the murder of Emperor Valentinian III in 455, the Vandal King Genseric sailed to Ostia and sacked this Italian metropolis, although the imperial capital had long since been moved to Ravenna.

ANSWER: **Rome**

[10] The Vandal Kingdom fell after this Byzantine general led an army into Africa and won at Ad Decimum and Tricamarum. With Narses, this commander put down the Nika Riots for Emperor Justinian.

ANSWER: Flavius **Belisarius**

<European History>

13. Answer the following about the unique phonology of the Amazonian language Pirahã ("pee-rah-HAH"), for 10 points each.

[10] Pirahã is claimed to have only ten of these abstract linguistic units of sound that distinguish one word from another in minimal pairs. Unlike morphemes, these units do not necessarily convey meaning.

ANSWER: **phonemes**

[10] In Pirahã, the consonants k, p, and h exhibit this type of allophony as they can interchange in the same context without altering meaning. The English word "economics" exhibits this phenomenon since its first vowel can be realized as "ee" or "eh."

ANSWER: **free variation** [or **random variation**]

[10] Pirahã is disputed to have an affricate ("AFF-ruh-kit") phoneme consisting of a dental stop followed by a trill at this place of articulation. Pirahã uses a normal trill at this place of articulation, which is generally rare and paralinguistic, as an allophone of /b/ before /o/.

ANSWER: **bilabial** [accept **bilabial** trill or **bilabial** consonant; prompt on **labial** or using both **lips**]

<Social Science (Linguistics)>

14. Answer the following about the wide range of EM spectra detected by NASA's Great Observatories project, for 10 points each.

[10] This first major optical telescope to be put in orbit can receive visible light waves without obstruction from the atmosphere. As of 2018, its namesake now co-names a law with Georges Lemaître ("luh-MET-ruh") about the expansion rate of the universe.

ANSWER: **Hubble** Space Telescope [or **HST**]

[10] Since the Spitzer Space Telescope operates in the infrared region, it can detect relatively cool exoplanets using this technique that involves identifying namesake events that cause periodic dips in the brightness of a parent star.

ANSWER: **transit** method [or **transit** photometry; prompt on **photometry**]

[10] In October 2019, the Chandra observatory produced X-ray images of the Tycho supernova remnant in this constellation with a prominent W-shaped asterism. Another well-studied supernova remnant in this constellation is the brightest extrasolar radio source in the sky.

ANSWER: **Cassiopeia** [prompt on **Cas**]

<Other Science (Astronomy)>

15. This author theorized the existence of a primordial "Urpflanze" ("OORP-flont-suh") from which all plant life developed in his *Metamorphosis of Plants*. For 10 points each:

[10] Name this author who inspired some "remarks" by Ludwig Wittgenstein ("VIT-gun-shtyne") with his anti-Newtonian treatise on the *Theory of Colors*. He analogized human relationships to chemical reactions in his novel *Elective Affinities*.

ANSWER: Johann Wolfgang von **Goethe** ("GUR-tuh")

[10] Goethe first theorized the "Urpflanze" in his notes from this event. J. H. W. Tischbein painted Goethe reclining on a rock slab during this event, which Goethe recounted in a book with the epigraph "I, too in Arcadia."

ANSWER: Goethe's **Italian Journey** [or equivalents of Goethe's **journey** to **Italy**; accept **Italian Journey** or **Italienische Reise**; accept more specific answers in place of "Italy," such as **Rome** or the **Campagna**]

[10] Goethe's interest in alchemy informed his story "The Green Snake and the Beautiful Lily," which in German is simply titled for this genre. Hans Christian Andersen wrote stories of this genre such as "The Little Mermaid."

ANSWER: **fairy tales** [or **Märchen**; prompt on **children's** literature or **folklore** or **folktales**]

<European Literature>

16. This emperor besieged Viterbo to restore a loyal imperial garrison, only to see papal representative Ranieri Capocci ("ron-YAIR-ee ka-PO-chee") massacre the loyalists after he signed a peace treaty. For 10 points each:

[10] Name this emperor who promulgated the Constitutions of Melfi in his Kingdom of Sicily. This husband of Yolande of Jerusalem launched the Sixth Crusade to recapture the holy city.

ANSWER: **Frederick II** Hohenstaufen [prompt on **Frederick**]

[10] Frederick II feuded extensively with Popes Gregory XI ("the eleventh") and Innocent IV ("the fourth"), who took this action against him four times. Catholics subject to this censure are barred from receiving the Eucharist or any other sacrament.

ANSWER: **excommunication** [or word forms]

[10] Partisans of the Holy Roman Emperor who fought against supporters of the Pope were known by this name, taken from the ancestral castle of Frederick II's Hohenstaufen ("HO-en-shtow-fin") dynasty.

ANSWER: **Ghibellines**

<European History>

17. This country now patrols a "safe zone" established in the wake of Operation Peace Spring, in which Turkey invaded Syria to seize Kurdish-controlled land. For 10 points each:

[10] Name this country that brought troops into Syria to support the government of Bashar al-Assad. NATO has condemned this country's actions in Syria, as well as its attempted annexation of Crimea.

ANSWER: **Russia** [or the **Russian** Federation]

[10] This Russian paramilitary organization has been active in Syria, participating in skirmishes with US-led forces. This private military company is led by Yevgeny Prigozhin, who was reportedly censured by the Kremlin for this group's unauthorized attacks.

ANSWER: **Wagner** ("VOG-ner") Group

[10] The Wagner Group is said to have bid unsuccessfully for security contracts against L6G, owned by this man. This brother of Betsy DeVos founded the American mercenary company Academi, formerly known as Blackwater.

ANSWER: Erik **Prince**

<Current Events>

18. These people are saved from a rout at Ravenswood by the arrival of Hygelac, whose warriors split open the head of Ongentheow ("ON-gen-thay-oh"), the elderly king of their rival group. For 10 points each:

[10] Name this tribe. Their semi-legendary wars with the Swedes are alluded to throughout a poem in which a king of these people dies after a battle with a dragon.

ANSWER: **Geats** ("GAY-ats") [or *gēatas*]

[10] Wiglaf gives a speech warning of the revival of the Geatish wars with the Swedes after the death of this Geatish king, who slays Grendel in his namesake Old English poem.

ANSWER: **Beowulf**

[10] Wiglaf relates how the warriors who slew Ongentheow received gifts of these objects. In kennings throughout *Beowulf*, this word is combined with "-giver" to mean "king" and with "-Danes" to suggest Danish wealth.

ANSWER: **rings** [or **hring**]

<British Literature>

19. The teetotaler Edward Trelawny was outraged that this artist included a glass of grog in his painting of Trelawny as a wizened sailor being read old logbooks by his great-granddaughter. For 10 points each:

[10] Name this painter who used the subtitle "It might be done and England should do it" for that painting. His wife Effie Gray posed for his British-history-themed paintings *The Order of Release* and *Peace Concluded*.

ANSWER: John Everett **Millais** ("mill-AY")

[10] Millais also heroicized the British Empire in a painting of this person listening to an old sailor's tales on the beach. James Marsh's cover for the Talk Talk album *It's My Life* deconstructs that painting of this man's "boyhood."

ANSWER: Walter **Raleigh**

[10] Like other Pre-Raphaelite artists, Millais frequently hired Fanny Eaton, the daughter of a Jamaican slave, for this role. Elizabeth Siddal also often worked in this role, which involves posing for an artist.

ANSWER: artist's **models** [or word forms]

<Painting/Sculpture>

20. The acronym ESKAPE refers to a group of bacteria that commonly display this general phenomenon. For 10 points each:

[10] Identify this phenomenon responsible for superbugs. Bacteria can gain this property by expressing beta-lactamases, which break down penicillin.

ANSWER: **antibiotic resistance** [or **ABR**; or **AR**; or **resistance to antibiotics**; or **multidrug resistance**; or **MDR**; or total **drug resistance**; or **TDR**; or **antimicrobial resistance**; or **AMR**; prompt on **resistance** by asking "resistance to what?"; anti-prompt on **beta-lactam resistance** or **penicillin resistance** by asking "can you be less specific?"]

[10] Drugs are examples of this broad class of molecules that includes any molecule not naturally produced or expected to be found in a given organism. Cytochrome p450s ("P-four-fifty's") metabolize both endogenously produced molecules and these molecules.

ANSWER: **xenobiotics**

[10] Antibiotic resistance is often a result of bacteria overexpressing this type of protein responsible for transporting xenobiotics out of a cell. The RND superfamily is a group of these proteins in bacteria, and P-glycoprotein 1 is one of these proteins responsible for tumor drug resistance.

ANSWER: **efflux** pumps [prompt on ATP-binding cassette transporters or ABC transporters or ABC proteins by asking “many ABC transporters act as what type of protein pump?”]

<Biology>

21. A rare subspecies of chamois (“sham-WAH”) inhabits this mountain range, whose highest peak, Gerlachovský štít (“gair-la-KHOVE-skee shteet”), was mapped by Austrian lumber baron Ludwig Greiner. For 10 points each:

[10] Name this high subrange of the Carpathians, east of the Beskids along Poland’s southern border. A rare breed of white sheepdog comes from Zakopane (“za-ko-PA-neh”) in the Podhale (“pode-HA-leh”) foothills of these mountains, where people make oscypek (“ohst-SIP-eck”) cheese.

ANSWER: **Tatra** Mountains [or **Tatry**; accept any specific divisions of the **Tatras**]

[10] Franciszek Nowicki (“frahnt-SEE-shek no-VITS-kee”) designed the infamously dangerous Eagle’s Path through the Tatras, an example of this type of climbing path named for its use of steel cables and iron rungs. Alpinists built many of these paths in the Dolomites.

ANSWER: **via ferrata** [or **vie ferrate**; prompt on iron path or iron way or similar answers by asking “what’s the Italian term?”]

[10] A via ferrata is used to climb the Cimon (“CHEE-moan”) della Pala, which is nicknamed the Dolomites’ version of this perilous peak on the Swiss–Italian border. Edward Whymper first climbed this famed alpine peak, whose pyramidal sides are easiest to ascend along the Hörnli Ridge.

ANSWER: **Matterhorn** [or Monte **Cervino** or Mont **Cervin**]

<Geography>