

STIMPY 2015: we barely wrote the tournament, so there was no time to write a subtitle

Packet by Michigan A and Penn B

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Tossups

1. **This novel ends with an intricate description of a brook trout. In this novel, several pipe-wielding men lead a caravan of slaves and pregnant women followed by several catamites. This novel's main characters enter a clearing and discover a dead baby roasting on a spit after spending a night with an old man who lies about his name being Ely. In a flashback in this novel, an argument over a gun with only two (\*) bullets leads a woman to walk off into the wilderness and kill herself with a piece of obsidian. In this novel, the man makes repeated references to "carrying the fire" to his son, who joins up with a mysterious family at the novel's end after the man dies of an infection. For 10 points, name this novel in which an unnamed father and son travel the title path through a post-apocalyptic landscape, written by Cormac McCarthy.**

ANSWER: *The Road*

2. **Eleven men, including Denzil Holles, fled from this organization after denouncing it in the "Declaration of Dislike." Factions in this organization included the Grandees and the New Agents, who published a tract about the "Case" of this group "Truly Stated." At Corkbush Field, some members of this organization refused to sign the *Heads of Proposal* in favor of the more extreme *Agreement of the People*. Members of this organization (\*) discussed suffrage at the Putney Debates. Politicians were barred from roles in this organization by the Self-Denying Ordinance. This force was partly formed from cavalry which Prince Rupert dubbed "Ironsides." Under Thomas Fairfax, this force won the Battle of Naseby. For 10 points, name this army made up of Roundheads which fought for Parliament in the English Civil War.**

ANSWER: **New Model** Army [anti-prompt on "Levellers"; prompt on less specific answers like "Parliamentary army" or "Roundheads"]

3. **Creating the *I-V* graphs in a form of this effect shows a certain phenomenon at areas called Shapiro spikes. The RCSJ model is one form of a device that utilizes this effect, and it can be modeled using the Stewart-McCumber parameter in certain cases. One form of this effect is driven by a DC voltage, and is actually called the (\*) AC version of this effect. An equation governing this effect involves the sine of the phase difference,  $\phi$  of  $t$ , and this effect's namesake constant is  $2e$  over  $\hbar$ . This effect is used in certain magnetometers that can measure tiny magnetic fields and are called SQUIDS. For 10 points, name this effect in which Cooper pairs tunnel across a weak link between two superconductors, named for a British physicist.**

ANSWER: **Josephson** effect

4. **A recording of these animals is incorporated into the third movement of Rautavaara's *Cantus Arcticus*, which is named for the migration of these animals. In a large choral work, the only solo tenor aria, *Olim lacus colueram*, represents this animal. In one work, a movement depicting of one of these animals follows a movement that quotes *Danse Macabre* and depicts "Fossils." In a tone poem, one of them is represented by an (\*) english horn. An aria from *Carmina Burana* is sung by one of them roasting on a spit. A ballet featuring Anna Pavlova was based on the penultimate movement of *The Carnival of the Animals*, in which a solo cello represents this animal. Sibelius wrote a tone poem about one of them from Tuonela. For 10 points, name this bird into which Odette is transformed, in a ballet by Tchaikovsky.**

ANSWER: **swans** [accept *The Swan of Tuonela*; accept *Swan Lake*; accept *Le Cygne*; prompt on "birds"]

5. **Opponents of this policy attempted to overthrow the government in the first "constructive motion of no confidence." The initial secrecy of this policy was broken when the Bahr paper was leaked to *Quick* magazine.**

**The development of this policy was supported by the Four-Powers Agreement, which prompted the creation of “permanent missions” under the Basic Treaty and the signing of the (\*) Transit Accord.** The popularity of this policy may have led Markus Wolf to leak the information that Gunter Guillaume was a spy. This policy was symbolized by the “kniefall” performed by its creator at the Warsaw Ghetto Uprising Memorial. This policy replaced the Hallstein doctrine, which refused to recognize a certain country. For 10 points, name this policy of Willy Brandt which called for better relations with East Germany.

ANSWER: Ostpolitik [prompt on translations like “Eastern policy”]

**6. Several of these compounds exhibit bird’s eye maple under cross-polarized light. Along with a manganese-iron oxide, a perovskite member of this general class of compounds probably makes up most of the lower mantle. Pegmatites are usually rich in these compounds. It’s not calcite, but some of these compounds form a namesake ooze on the ocean floor, which is formed from frustules and radiolarian (\*) exoskeletons.** The organic material of trees is slowly replaced by compounds of this general type to form petrified wood. Examples include pyroxene and amphibole. Diatoms produce one of these compounds. Rhyolite, granite, and other felsic rocks are rich in these minerals. For 10 points, name this broad class of minerals that includes feldspars and quartz.

ANSWER: silicates [accept siliceous ooze; accept any answer containing the word silicate; anti-prompt on “feldspars,” “silica,” or “mica”]

**7. The founder of the Morshediyya order, Kazeruni, supposedly believed that this city contained the only halal grain. While allegedly hiding from the Assassins in this city, al-Ghazali wrote *Deliverance From Error*. A man discovers a *sidra* tree during a trip in which that man visits this city. The *qibla* originally (\*) faced this city, where a former trash dump was converted into a building site by Abd al-Malik. This city was the location of the “Furthest Mosque,” which was visited while one man was riding a donkey-mule combination called al-Buraq. That visit is detailed in “The Star” sura, as this city was the destination of Muhammad’s Night Journey.** For 10 points, name this city, the location of the Temple Mount, the Dome of the Rock, and the Western Wall.

ANSWER: Jerusalem

**8. A character created by this author is fined 400 ounces of gold after describing the king’s runaway palfrey to the Head Huntsman without actually seeing it. That character later recognizes his former lover after she writes his name in the sand while she is attempting to find a basilisk to cure her master’s sickness. While in a library, the title character of a novel by this man argues about the merits of Milton and Plato with the Venetian nobleman Pococurante before dining with six previously deposed kings at an inn with his valet (\*) Martin.** A character created by this author loses his lover Semire after being shot in the eye with an arrow, and later marries Astarte, the Queen of the Babylonians. This author created a professor of “metaphysico-theologo-cosmonigology” who tutors the lover of Cunegonde in a satirical novella. For 10 points, name this author of *Zadig* and *Candide*.

ANSWER: Voltaire [or François-Marie Arouet]

**9. Proclus argued that this concept is characterized by a *parhupostasis*, or “parasitic existence” in an essay “On the Subsistence” of this concept. In an appendix to the *Ethics*, Spinoza defined this concept as “whatsoever things hinder man’s perfecting of his reason” in contrast to things that allow him to enjoy “the intellectual life.” Kant analyzed this concept in terms of the frailty of human nature, impurity of the heart, and perversity in the first section of *Religion Within the Bounds of Bare Reason*, which addresses its (\*) “radical” type. Hannah Arendt asserted that this concept arose from “sheer thoughtlessness” in the case of Adolf Eichmann in a book subtitled for this concept’s “banality.” Gottfried Leibniz coined the term “theodicy” for works that attempt to reconcile the existence of God with the existence of this concept.** For 10 points, name this concept, the opposite of good.

ANSWER: evil [do not accept “bad”]

10. In 2011, Thierry Lorho and two other men employed by French electricity company EDF were convicted of spying on this organization. While visiting a facility at Prirazlomnaya in 2013, members of this organization were arrested and detained near Murmansk. The “Arctic 30” are members of this organization, which recently released a YouTube video entitled “Everything is NOT (\*) Awesome,” criticizing Lego’s decision to partner up with Shell. In December 2014, members of this organization failed to wear special shoes while leaving a message declaring “Time for change! The future is renewable” at the Nazca Lines. For 10 points, name this environmentalist organization whose *Rainbow Warrior* ship was bombed in Auckland by the French government.

ANSWER: Greenpeace

11. At one point, the speaker of this poem expresses a duty to “To murmur name upon name, As a mother names her child.” The speaker of this poem chooses to include a “drunken, vainglorious lout” in his song because “he, too, has resigned his part in the casual comedy.” This poem describes “Hearts with one purpose alone” in a stanza that includes the image of a steadfast stone set in the middle of a stream. In the opening stanza of this poem, the speaker recalls the (\*) “polite meaningless words” he spoke to “vivid faces” before lamenting “All changed, changed utterly: A terrible beauty is born.” This poem concludes after listing several deceased revolutionaries, including “MacDonagh and MacBride And Connolly and Pearse.” For 10 points, name this William Butler Yeats poem inspired by an Irish uprising.

ANSWER: “Easter, 1916”

12. This man claimed that shipments of quinine to soldiers dying of malaria had been delayed during his feud with Jesse Jones. Westbrook Pegler attacked this man for writing the “Dear Guru” letters to a mystic who developed Living Ethics, Nicholas Roerich. This founder of the Hi-Bred Corn Company gave the “Price of World Victory” speech, which proclaimed the “century of the common man.” As Secretary of (\*) Agriculture, he pursued the “parity payment” doctrine and paid farmers to slaughter hogs while implementing the Agricultural Adjustment Act. This politician succeeded “Cactus Jack” Garner and ran with Glen Taylor on the Progressive ticket in 1948. For 10 points, name this Iowa native who was succeeded as vice president by Harry Truman after serving as FDR’s second vice president.

ANSWER: Henry Agard Wallace

13. A large urn sits on a pedestal behind a military officer in red in this artist’s portrait of Colonel John Bullock. This student of Hubert Gravelot collaborated with John Hoppner on a portrait of Countess Charlotte Talbot shortly before his death. This artist created a painting in which a seated girl in a dark dress rests her elbow on her knee and watches a group of pigs drink some milk out of a bowl. In a painting by this artist, a dog looks up at a man with a long rifle standing next to his (\*) wife, who wears a blue dress and sits on a green bench. The Huntington Library is home to this man’s most famous painting, a portrait of Jonathan Buttall dressed in the title color. For 10 points, name this English portraitist and landscape artist, who painted *Mr. and Mrs. Andrews* and *The Blue Boy*.

ANSWER: Thomas Gainsborough

14. Extending one theory for calculating these things involves approximating off-diagonal Hamiltonian elements with an equation named for Wolfsberg and Helmholtz. Coefficients used to describe them can be calculated with the secular equations which include terms for the Coulomb integral and resonance integral. Calculating their energy when more than two molecules are involved is aided by SALCs. Whether the phase of these constructs stays the same under inversion determines whether they are (\*) gerade or ungerade. These constructs, which correctly predict the paramagnetism of oxygen, can be expressed as a linear combination of similar, simpler constructs. Ones with a node between two molecules are denoted by a star; those ones are antibonding and have a higher energy than bonding ones. For 10 points, name these representations of the behaviour of an electron within a molecule.

ANSWER: molecular orbitals [or MO; prompt on “orbitals”; prompt on “molecules” until “secular”]

15. Research by Cameron et al. suggests that the correlation between this value may and blood glucose may be due to interactions between glucose and luteinizing hormone. That work supports the Trivers–Willard hypothesis, which explains differences in this value due to maternal condition. A paper on this value by W. D. Hamilton introduced the idea of the unbeatable strategy, which was developed into the widely-used concept of evolutionarily stable strategies. When fitness depends on (\*) this value, some species alter it by selective infanticide or abortion, and it can be altered by sequential hermaphroditism. Fisher’s principle explains why, for most species, this value is approximately one-to-one. For 10 points, name this ratio of the number of males and females in a population.

ANSWER: sex ratio [or equivalents]

16. A character created by this author has his face swollen by mosquito bites after finding that his bed has been filled with grasshoppers. In a novel by this author, a robber steals a box of yams from the house of a man who is frequently annoyed by the baseballs thrown into his yard by students at the school next-door. A novel by this author follows an artist who imagines painting Ophelia drowning before catching sight of (\*) O-Nami in a country bathhouse. In one of his novels, Red Shirt and the Clown are beaten up for visiting a brothel by Porcupine and the title teacher. In another novel by this author, Mr. Sneezee owns an animal which gets drunk and drowns in a water barrel. For 10 points, name this Japanese author of *Kusamakura*, *Botchan*, and *I am a Cat*.

ANSWER: Natsume Sōseki [accept names in either order; accept Natsume Kinnosuke]

17. A church in this city hangs a stuffed crocodile above its Door of the Lizard and features a horseshoe arch on its Door of Forgiveness. A structure in this city houses the Antiquarium and was designed by Jurgen Mayer-Hermann. That edifice supposedly resembles six giant interconnected honeycombed mushrooms. This city used Finnish birch to construct the largest wooden structure in the world, the Metropol Parasol. The Cathedral of St. Mary of the See in this city is the second-largest cathedral in the world, and it is located next to the (\*) Giralda bell tower, which was originally designed as a minaret. It’s not Granada or Segovia, but a *mudejar*-style fort in this city contains a domed Hall of Ambassadors and The Courtyard of the Maidens. For 10 points, identify this Spanish city home to a royal Alcazar, the capital of Andalusia.

ANSWER: Seville, Spain [or Sevilla, Spain]

18. A hymn to this figure notes that one who recites it 108 times daily for 108 days will attain liberation, and was composed by Tulsidas. This figure impregnated a fish with a drop of his sweat, leading to the birth of a guard of Patala known as Makardhwaja. Arjuna almost killed himself out of shame after failing this deity’s challenge to build a bridge of arrows. Also known as Pavanputra, this son of Anjana and (\*) Vayu burned down parts of Lanka after delivering a ring to a captive of Ravana. This figure was one of three to hear Krishna deliver the Bhagavad Gita, as he was displayed on Arjuna’s flag. This figure once ripped his chest open to reveal Rama and Sita in his heart. For 10 points, name this monkey god who appears in the Ramayana.

ANSWER: Hanuman [accept Pavanputra before mention; accept Anjaneya or any of Hanuman’s million other names]

19. An economist currently at this university authored an article analyzing the “utilitarian,” “total utility,” and “Rawlsian” types of certain concept before inventing a new fourth “basic capability” type in “Equality of What?” Two economists from this university published the austerity-promoting paper “Growth in a Time of Debt” in 2010. The Pigou Club was founded by an economist from this university who authored the popular 1998 textbook (\*) *Principles in Economics*. An economist at this university developed the entitlement approach to food scarcity in the book *Poverty and Famines*. An economist resigned as president of this university after a 2005 presentation suggesting that the lack of women in science was due to differences in aptitude. For 10 points, name this Ivy League university which formerly had Larry Summers as its president.

ANSWER: Harvard University

20. Under this ruler, wolves were tagged as “noxious animals” by noted wolf killer Edwin Dun, who reorganized agriculture in this man’s nation. The idea of a “national family” was promoted under this ruler, under whom The National Morality Movement began. The slogan “Enrich the country, strengthen the military” was introduced when this ruler came to power, which ended the (\*) *sonno joi* movement. This ruler issued a document containing the Five Articles, including one that promised to seek “knowledge throughout the world.” This man’s forces won the Battle of Shiroyama, ending the Saigo Takamori led Satsuma Rebellion. The issuer of the Charter Oath, this emperor was the namesake of a period that included the Boshin War. For 10 points, name this emperor succeeded by Taisho, who ruled during a namesake restoration.

ANSWER: Emperor Meiji

## Bonuses

1. Answer the following about skulls in paintings. For 10 points each:

[10] The cover of David Sedaris's *When You Are Engulfed in Flames* comes from this artist's *Skull of a Skeleton with Burning Cigarette*. He also painted two portraits of his forlorn-looking physician resting his elbow on a table.

ANSWER: Vincent Willem van Gogh

[10] An anamorphic skull dominates the lower half of this painting by Hans Holbein the Younger. It features the two title characters standing by a collection of scientific instruments.

ANSWER: *The* Ambassadors

[10] This Russian realist painted a pyramid of skulls in one of his many works inspired by military conflict, *The Apotheosis of War*.

ANSWER: Vasily Vasilyevich Vereshchagin

2. This character imprints the insignia of the University of Virginia on his sneakers, which he later throws into a furnace. For 10 points each:

[10] Name this former football star. Near the end of the play in which he appears, his father kills himself so this character can use the life insurance money to start his own business.

ANSWER: Biff Loman

[10] In a flashback, Willy threatens to whip this character for not giving Biff the answers to a math exam. This character is the son of the Lomans' neighbor, Charley.

ANSWER: Bernard

[10] Willy, Biff, and Bernard appear in *Death of a Salesman*, a play by this man. His failed marriage to Marilyn Monroe inspired his play *After the Fall*.

ANSWER: Arthur Miller

3. "Remember the ladies" by answering the following about women from early American history. For 10 points each:

[10] A woman from this family, Mercy Warren, advocated for a Bill of Rights in her *Observations on the New Constitution*. Her brother from this family, James, coined the phrase "taxation without representation is tyranny."

ANSWER: Otis [or Mercy Otis Warren; or James Otis]

[10] This plantation owner transformed the economy of colonial South Carolina by introducing what would become one of the region's most important cash crops, indigo.

ANSWER: Eliza Lucas Pinckney [or Eliza Pinckney; prompt on "Pinckney"]

[10] Margaret Brent sold cattle belonging to a deceased governor of this colony in order to feed its mutinous troops. That governor belonged to this colony's Calvert family, which established it as a refuge for Catholics.

ANSWER: Maryland

4. Answer some questions about Arthur Cayley. For 10 points each:

[10] Cayley came up with a theorem later proved by this Irish mathematician friend of his. This mathematician invented quaternions and reworked Lagrangian mechanics in terms of his namesake quantity, the total energy.

ANSWER: William Rowan Hamilton [accept Hamiltonian mechanics]

[10] The Cayley–Hamilton theorem states that every square matrix over a commutative ring has this property. This property is also true of eigenvalues.

ANSWER: it satisfies its own characteristic equation [or it is a root of its own characteristic polynomial; accept descriptions like "if you plug it into its characteristic polynomial, you get zero"]

[10] Cayley also came up with the modern formulation of groups. Cayley's theorem states that, since a group's action on itself by left multiplication is regular and faithful, the group is isomorphic to a subgroup of this other group.

ANSWER: the **symmetric group on G** [prompt on “Sym(*G*),” “S of *G*,” “S-*G*,” or “S-sub-*G*”; prompt on “symmetric group” by asking “the symmetric group on what?”]

5. Traditionalist Catholics rejoice! Answer these questions about getting back into a pre-Vatican II mindset. For 10 points each:

[10] This recent Pope was noted for his theological conservatism, becoming the first German Pope since Adrian VI and the first Pope to resign since Gregory XII.

ANSWER: Pope **Benedict XVI**

[10] Benedict is a supporter of the right of congregations to celebrate this pre-Vatican II form of the mass, in which only Latin and not vernacular is used.

ANSWER: **Tridentine Mass** [or **Missa Tridentina**; prompt on “Latin Mass”]

[10] The Tridentine Mass is celebrated by many people who advocate for this position, that the office of the Pope has been vacant since the great Pope Pius XII died.

ANSWER: **Sedevacantism**

6. This city lies in an exclave cut off from the rest of the country by Bosnia and Herzegovina’s twelve-mile coastline. For 10 points each:

[10] Name this city that was once the heavily fortified capital of the Republic of Ragusa.

ANSWER: **Dubrovnik**

[10] Dubrovnik is in this former Yugoslav country that owns over a thousand islands in the Adriatic Sea. It has its capital at Zagreb.

ANSWER: **Croatia**

[10] The Croatian peninsula of Istria forms part of the gulf named for this city. This Italian city near the Slovenian border served as the southern end of Winston Churchill’s “Iron Curtain.”

ANSWER: **Trieste**

7. A poem in this group compares the narrator’s laments to “dead letters sent / To dearest him that lives alas! away.” For 10 points each:

[10] Identify this set of six somber works that includes “I Wake and Feel the Fell of Dark, Not Day” and “Carrion Comfort” and were written during their author’s time as a professor at University College Dublin.

ANSWER: the **Terrible Sonnets** [prompt on “sonnets by Hopkins”]

[10] The Terrible Sonnets were written by this poet of “The Wreck of the Deutschland,” who frequently used sprung rhythm in poems like “The Windhover.”

ANSWER: Gerard Manley **Hopkins**

[10] This poem by Hopkins states that “the world is charged” with the title entity, which “will flame out” and “gather to a greatness, like the ooze of oil.” It describes the Holy Ghost brooding with “warm breast” and “bright wings.”

ANSWER: **“God’s Grandeur”**

8. This office was the most prestigious position on the track of offices known as the *cursus honorum*. For 10 points each:

[10] Name this position in the Roman Republic held by two elected officials for a period of a year.

ANSWER: **consuls**

[10] The consuls were one of the groups who were allowed to wear this type of toga, which had a purple stripe. High priests also wore it, as did freeborn males before puberty.

ANSWER: toga **praetexta**

[10] Any official who held *imperium* was attended by lictors, bodyguards who carried these objects. These ceremonial objects consisted of an axe surrounded by a bundles of rods.

ANSWER: **fascēs**

9. Answer some questions about compounds containing transition metals. For 10 points each:

[10] This list organizes ligands in terms of ability to increase the octahedral splitting energies of their respective complexes. On one extreme lies carbon monoxide, and on the other extreme lies large halogen ions.

ANSWER: spectrochemical series

[10] Linkage isomerism occurs when a compound can bind to the metal at multiple atoms, and is displayed by compounds such as thiocyanate, sulfite, and this ion with formula  $\text{NO}_2^-$  (“N-O-two-minus”), unlike *nitrate* which has three oxygens.

ANSWER: nitrite

[10] This phenomenon refers to the ability of some ligands to weaken the bonds of the ligands at the opposite side of a complex. It changes the ground state properties such bond lengths, vibration frequencies, and NMR coupling constants.

ANSWER: trans influence [also accept structural trans effect or thermodynamic trans effect; prompt on “trans effect”]

10. This photographer took the “Magnificent Eleven” photographs during the D-Day landings. For 10 points each:

[10] Name this Hungarian photographer of *The Falling Soldier*.

ANSWER: Robert Capa [or Endre Friedmann]

[10] *The Falling Soldier* depicts a death during this conflict, which was also depicted in *Children Playing in the Ruins*. It also inspired Calder’s *Mercury Fountain* and Picasso’s *Guernica*.

ANSWER: Spanish Civil War

[10] Capa founded Magnum Photos with this French photojournalist, who captured the “decisive moment” in works like *Children Playing in the Ruins*. Two of his most famous photos depict a bicycle from the top of a staircase and a smug-looking boy holding two wine bottles.

ANSWER: Henri Cartier-Bresson

11. Name some characters from Victor Hugo’s *Les Misérables*. For 10 points each:

[10] The novel opens with this character being released from prison after serving nineteen years for stealing a loaf of bread. He takes up the name Madeleine to hide his true identity and is ruthlessly pursued throughout the novel by Inspector Javert.

ANSWER: Jean Valjean

[10] Inspector Javert misidentifies this apple thief as Jean Valjean and leaves for Arras to attend his trial. At this man’s trial, Jean reveals his true identity and is arrested by Javert.

ANSWER: Champmathieu

[10] This character sells her hair and teeth to provide for her infant daughter Cosette, who later falls in love with Marius Pontmercy. She dies of shock after Javert reveals Jean’s identity to her.

ANSWER: Fantine

12. One of this author’s novels is set at the Chevron estate, where Sebastian meets Leonard Anquetil at a party. For 10 points each:

[10] Name this author of *All Passion Spent* and *The Edwardians*. She was the inspiration for a novel in which the title man wakes up in a woman’s body.

ANSWER: Vita Sackville-West

[10] Vita Sackville-West notably had an affair with this author of *Orlando*. Michael Cunningham’s *The Hours* features her novel *Mrs. Dalloway* as a major plot point.

ANSWER: Virginia Woolf [or Adeline Virginia Stephen]

[10] Woolf’s novel *Flush* is taken from the point of view of this author’s pet dog. In a blank verse novel by this author, Lady Waldemar helps Aurora Leigh win the hand of her cousin Romney.

ANSWER: Elizabeth Barrett Browning [prompt on “Browning”]



13. This man's father attacked the Gwalior Fort a bunch of times, but died before this son of his captured it. For 10 points each:

[10] Name this son of Sikander, who died during a battle in which the superior artillery of his opponent caused his elephants to go crazy, ending a sultanate that followed the Sayyid Dynasty.

ANSWER: **Ibrahim Lodi** [prompt on "Lodi"]

[10] Ibrahim Lodi ruled a sultanate based in, and named after, this region. Edward Lutyens and Herbert Baker designed a "new" version of a city with this name that now serves as its country's national capital.

ANSWER: **Delhi** [or New **Delhi**]

[10] Like the Lodis, the losers of the Third Battle of Panipat, the Durrani Empire, hailed from this country. Akhbar Khan led a revolt in this country during which the British suffered a disastrous retreat from this country's capital city.

ANSWER: **Afghanistan**

14. The first term in this equation is the volume term, which arises from the strong force and is proportional to  $A$ . For 10 points each:

[10] Name this formula, usually expressed in terms of  $A$  and  $Z$ , that allows one to calculate either its namesake quantity or binding energy.

ANSWER: Bethe–**Weizsäcker** formula [accept **semi-empirical mass** formula]

[10] The Bethe–Weizsäcker formula is based on the liquid drop model proposed by George Gamow, which treats this structure as a drop of uniform liquid. It notably contains protons and neutrons and is found at the center of an atom.

ANSWER: **nucleus**

[10] In the determination of the Coulomb term, the nuclear radius is determined empirically and is approximated as being proportional to  $A$  raised to this power.

ANSWER: **one-third**

15. This linguist played a major role in African American Vernacular English being accepted as a rule-governed variety of English. For 10 points each:

[10] Name this sociolinguist, who conducted a pioneering study on the social stratification of English in New York City, in which he elicited the phrase "fourth floor" from workers at different department stores.

ANSWER: William **Labov**

[10] Labov's influential MA thesis was on sound change in the variety of English spoken on this island, including the centralization of the diphthongs /au/ ("ow") and /ai/ ("eye").

ANSWER: **Martha's Vineyard**

[10] The large deaf population in Martha's Vineyard led to the development of an example of this type of language. A common example of this type of language is ASL.

ANSWER: **signed** language

16. David Sachs authored an influential article addressing "A Fallacy" in this philosophical dialogue. For 10 points each:

[10] Name this Platonic dialogue in which various characters attempt to define justice. In this dialogue, Plato envisions an imaginary city-state which is ruled by philosopher-kings.

ANSWER: *The* **Republic**

[10] In Book I, this bullish character speaks after Cephalus and Polemarchus, defining justice as "that which is to the advantage of the stronger."

ANSWER: **Thrasymachus**

[10] *The Republic* concludes with this episode, in which a man who dies in battle comes back to life and gives an account of the afterlife. It is used as an example to show how just souls are rewarded.

ANSWER: the myth of **Er**

17. A monk from Corvey Abbey with this name wrote a history of Germany during the reign of Otto the Great. For 10 points each:

[10] Give this name of a leader who lost thousands of supporters in the Massacre of Verden and who legendarily converted to Christianity after having a vision of the Christ Child during a communion.

ANSWER: **Widukind** [or **Widuking**]

[10] Widukind led the Saxons in revolt against this Carolingian king. This “great” king was crowned Holy Roman Emperor by Leo III on Christmas Day.

ANSWER: **Charlemagne** [or **Charles I** or **Charles the Great**; or **Carolus Magnus**]

[10] This Englishman, who ran the palace school in Aachen, repeatedly tried to get Charlemagne to stop massacring Saxons and make peace.

ANSWER: **Alcuin** of York [or **Alcuinus**; or **Ealhwine**; or **Albinus**; or **Flaccus**]

18. This organelle’s proteases, nucleases, lipases, phospholipases, phosphatases, and sulfatases are all acid hydrolases, and this cell maintains an internal pH of about 5. For 10 points each:

[10] Name this cellular organelle that is responsible for breaking down macromolecular waste that may consist intracellular organelles or materials from outside of the cells.

ANSWER: **lysosome**

[10] Waste materials are transported to the lysosome by these irregularly shaped compartments.

ANSWER: **endosome**

[10] This lysosomal storage disease is characterized by an ineffective phosphotransferase that prevents phosphorylation of mannose molecules, resulting in a buildup of proteins in lysosomes. It is similar to but more severe than Hurler’s disease.

ANSWER: **I-cell** disease [or **inclusion-cell** disease]

19. He married Cosima Liszt, who then left him for Wagner. For 10 points each:

[10] Name this irascible piano student of Liszt who premiered Liszt’s B minor piano sonata, a Wagner fan who conducted the premieres of *Tristan* and *Meistersinger*. Later, he “switched sides” and became a Brahms fanboy.

ANSWER: Hans von **Bülow**

[10] A lot of piano students might know Bülow’s name from his great annotated edition of these works, which is now published by Schirmer. These thirty-two pieces have nicknames like “Appassionata” and “Moonlight.”

ANSWER: **Beethoven**’s **piano sonatas** [accept reasonable equivalents; prompt for composer on “piano sonatas”]

[10] Bülow was also kind of insane. He insisted that his Meiningen orchestra play from memory, and once had ten of his violinists play this piece in unison. This D minor piece concludes Bach’s second partita for solo violin.

ANSWER: **chaconne** [or **ciaccona**]

20. In order to reach the land of this person, a hero followed a magic wheel through the Plain of Ill-luck and crossed the Bridge of the Leaps. For 10 points each:

[10] Name this female warrior, the rival of Aife. A hero later killed Connla, the son he had with this woman.

ANSWER: **Scathach** [or **Skatha**]

[10] This Irish hero, who got his name by killing a hound, trained under Scathach and fought Queen Medb’s forces in the Cattle Raid of Cooley.

ANSWER: **Cuchulainn** [or **Setanta**]

[10] Scathach gave Cuchulain this magical spear, which filled the bodies of those it struck with barbs.

ANSWER: **Gae Bulg**