

2025 ACF Regionals

Packet G by Chicago B, Ohio State A, UW B

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Tossups

1. A “covenant” named for this battle is supposedly followed by nationalist groups like the Oathkeepers. Some accounts of this battle, like that of Mavro Orbini, claim that the noble Vuk (“vook”) traitorously fled from the right flank. According to some accounts of this battle, a knight rode up to an opposing ruler and asked to kiss his hand or feet before killing him with a hidden dagger. In works like *The Mountain Wreath*, 19th-century nationalists embraced a “myth” about this battle, which is commemorated on the holiday Vidovdan. This battle is considered inconclusive despite the death of Prince Lazar, one of the successors of Stefan Dušan (“DOO-shahn”). After his father died at this battle, Bayezid the Thunderbolt ascended to the throne. For 10 points, name this 1389 battle between Serbian forces and Murad I’s Ottoman army.

ANSWER: Battle of **Kosovo** [or Battle of **Kosovo** Field; accept Battle of **Kosovës** or Battle of **Kosovo** polje; accept Battle of the **Field of Blackbirds**]

<Ohio State A, European History>

2. Oshunmare, an orisha of these phenomena, is often equated with a goddess of them accompanied by the first two humans, Adanhu and Yewa. To keep the world from collapsing, Nana-Buluku tasks a group of red monkeys to constantly feed iron to a deity of these phenomena. A goddess of these phenomena is given offerings of white-colored food, is married to the sky loa Damballa, and is named Ayida-Weddo. The Wawalag sisters are swallowed by a god of these phenomena after it smells their menstrual blood. Yurlunggur and Wolunka are names for that creature associated with these phenomena, who created landmarks like Uluru while moving through songlines during the Dreamtime. For 10 points, name this phenomenon represented in Aboriginal myth by a namesake serpent.

ANSWER: **rainbows** [accept **Rainbow** Serpent]

<Chicago B, Mythology>

3. This artist dug a trench into the ground to lower his painting of a man and three women in white dresses, the latter all modeled on his wife. Swirls of white and grey surround a face with closed eyes in this artist’s painting of his wife on her deathbed. This artist’s half-turned wife wears a billowing white dress and holds the title object alongside her son in a field in his *Woman with a Parasol*. This artist married his patron’s widow Alice Hoschedé (“ohsh-DAY”) after the death of his muse Camille Doncieux (“kah-MEE dawnsh-YOO”), whom he painted wearing a red kimono. Georges Clemenceau urged this artist to get surgery for his cataracts, which impacted a series that makes up two rooms of the Musée de l’Orangerie and includes this artist’s Japanese footbridge. For 10 points, while in Giverny, what artist painted his pond’s water lilies?

ANSWER: Claude **Monet** [or Oscar-Claude **Monet**]

<UW B, Painting and Sculpture>

4. Olwyn, the sister-in-law of a woman born to this family, described a “myth” of this family perpetuated by the epistle collection *Letters Home*. A poem recalls a woman in this family helping her children sing, “Thor is angry; boom boom boom!” during a hurricane. A poem addressed to a man from this family is titled for a god created via Ouija board and describes him as “pithy and historical as the Roman Forum.” A member of this family is told, “no frown of mine / will betray the company I keep” in a poem inspired by a Giorgio de Chirico painting, “The Disquieting Muses.” The speaker tells a man in this family, “I thought every German was you” in a poem that imagines him as “a man in black with a Meinkampf look.” For 10 points, what family’s patriarch Otto titles his daughter’s poem “Daddy”?

ANSWER: **Plath** family [or the **Plaths**; accept family of Sylvia **Plath**] (The poem in the third sentence is “The Colossus.”)

<Chicago B, American Literature>

5. Observation of the formation of these phenomena is the general goal of nondestructive testing of ferrous compounds using MPI. In quasi-static conditions, the power dissipation due to these phenomena is inversely proportional to a constant that is 1 for a sheet and 2 for a wire. Waste sorting at recycling facilities use these phenomena to separate metallic materials. In transformers, power loss caused by these phenomena can be minimized using laminated conductors and ferrite cores. Generation of these phenomena is used in braking systems often employed by roller coasters. These phenomena form due to a magnetic response as a consequence of Lenz’s law. For 10 points, what phenomena consist of electric charges moving in closed loops during induction, named for their resemblance to whirlpools?

ANSWER: **eddy** currents [or **eddies** or **Foucault’s current**; prompt on **currents**; prompt on electromagnetic **induction** until read; prompt on **magnetism** or **magnetic** fields until “magnetic” is read]

<UW B, Physics>

6. A group of “Slim shadows” in this poem who “trod a saraband” also appear as “damned grotesques [making] arabesques, / Like wind upon the sand” when seen with their “mop and mow.” The question “How else but through a broken heart / May Lord Christ enter in?” appears in this poem, which begins: “He did not wear his scarlet coat, / For blood and wine are red.” The pseudonym C.3.3. was used to publish this six-part poem in sestets, which describes the hanging of a figure who “walked amongst the Trial Men / in a suit of shabby gray.” The claims that “the coward does it with a kiss” and “the brave man with a sword” appear in this poem after the refrain “each man kills the thing he loves.” For 10 points, name this poem written by Oscar Wilde after his release from the title prison.

ANSWER: “The **Ballad of Reading Gaol**” (“RED-ing jail”)

<Ohio State A, British Literature>

7. Plutarch preserves Plato’s supposed claim that God “continually” practices this discipline, which is often cited to link Plato to this discipline’s “sacred” form. Socrates discusses knowledge with the title student of this discipline in the *Theaetetus* (“thee-ay-TEE-tuss”). Legendarily, an inscription above the Academy warned, “Let no one ignorant of [this discipline] enter here.” The *Timaeus* links each of the classical elements to an object studied in this discipline. Socrates uses a problem in this discipline to explain his idea of inborn knowledge, or *anamnesis*, to a slave in the *Meno*. A philosopher best known for naming a statement in this discipline led a vegetarian commune and was from Samos. For 10 points, Plato names five regular, convex polyhedra studied in what mathematical discipline?

ANSWER: **geometry** [accept sacred **geometry**; prompt on **mathematics** or **maths**] (The philosopher in the penultimate sentence is Pythagoras.)

<TM, Philosophy>

8. This city's founder had 17 children with his wife, Josette Vieau ("vee-OH"), and had followers point a cannon at Byron Kilbourn in an 1845 "Bridge War." This non-Alaskan city was originally named Juneautown after Solomon Juneau, who developed it with Morgan L. Martin. Businessmen like Jacob Best and Herman Reutelschofer ("ROY-tull-sho-fur") pioneered an industry in this city whose late-19th-century businesses included Cream City and Blatz. Many "forty-eighters" who settled in this city supported the candidacies of Emil Seidel and Victor L. Berger. An industry that flourished under the leadership of German-American immigrants to this city was led by Frederick Miller and Frederick Pabst. For 10 points, what city known for its beer production is the largest city in Wisconsin?
ANSWER: **Milwaukee**

<Chicago B, American History>

9. Religious members of this ethnic group undergo a baptism-like ceremony with waters from the "White Spring" at the age of 10; that ceremony is *mor kirin*. The *Saranjam* is a key work in a religion primarily followed by this ethnic group founded by the fourth of the "seven persons," Sultan Sahak. A three-stringed lute symbolizes that faith primarily practiced by this ethnic group, Yarsanism. A religion founded by this ethnic group believes that the universe emerged from a cosmic pearl, a story recorded in their *qewl* hymns. That religion of this ethnic group performs the "Feast of the Assembly" pilgrimage to Lalish to commemorate Sheikh Adi. This ethnic group's belief in the "Peacock Angel" Tawûsî Melek was called "devil worship" by extremists, triggering a 2010s genocide. For 10 points, name this ethnic group of most Yazidis in Iraq.

ANSWER: **Kurds** [or **Kurdish** people; accept **Yazidis** or **Yezidis** or **Ezidis** or **Yazidism** until read]

<UW B, Religion>

10. Dmitri Shostakovich's reorchestration of a cello concerto in this key added piccolos to its first movement and a harp to its second. The second movement Romanze of a piano concerto in this key is a solo cello and piano duet, which may have inspired the cello solo in Brahms's B-flat major second piano concerto. An *Allegro affettuoso* movement of a concerto in this key opens with a descending series of chords followed by a motif spelling out the name of the composer's wife. A later concerto in this key imitates *halling* dance in its finale and opens with a timpani roll that builds into this key's tonic chord. Robert Schumann's piano concerto in this key inspired one in the same key by Edvard Grieg. For 10 points, name this minor key that contains no sharps or flats.

ANSWER: **A minor** [reject "A" until "minor" is read and accept afterwards]

<MY, Classical Music>

11. Manganese-containing structures based on this mineral can exhibit "colossal magnetoresistance." The bismuth and oxygen Aurivillius phase of this mineral exhibits ferroelectricity and is a candidate for low-temperature co-fired ceramics. Strontium titanate was part of the first series of a phase of this mineral named for Ruddlesden and Popper. High-temperature superconductors like YBCO have structures named for this mineral. Metal halides with structures named for this mineral are commonly used in solar cells. The D-double-prime layer is characterized by high-pressure magnesium silicate called the "post" form of this mineral. This mineral names a structure for compounds of the form ABX₃. For 10 points, what mineral consisting of calcium titanium oxide is named for a Russian mineralogist?

ANSWER: **perovskite** [accept post-**perovskite**; accept **perovskite** solar cells; prompt on **PSCs**]

<Chicago B, Other Science>

12. In August 2021, protesters planted teepees on this politician's lawn and chained themselves to this politician's fence; that environmentalist protest was part of the Stop Line 3 Campaign that criticized this politician's withdrawal of an appeal against the project. This politician recorded a cell phone video giving a pro tip about changing a burnt-out headlight harness on a Ford Focus. This politician admitted "I'm a knucklehead" after falsely claiming to have been in Hong Kong during the Tiananmen Square protests. In 2023, this politician signed a bill providing universal free school breakfast and lunch. This politician went viral for a rant saying "these guys are weird" in an appearance discussing Republicans on MSNBC. For 10 points, name this governor of Minnesota.

ANSWER: Tim **Walz** [or Timothy James **Walz**]

<EC, Current Events>

13. An author with this surname began his series *The Great War of White Men* with a satire about an escaped POW pretending to be a deserter, *The Case of Sergeant Grischa*. Another author with this surname wrote a novel in which the title woman is discovered not to be the aristocrat "Christiana van Boolean," leading her to plan a robbery with the veteran Ferdinand. That author with this surname committed suicide in Brazil the day after he finished a memoir reflecting on Hitler's rise to power, *The World of Yesterday*. In a novella by an author with this surname, imprisonment by the Gestapo leads Dr. B to split his personality into "White" and "Black" in order to play chess against himself. For 10 points, *The Royal Game* is by an Austrian author with what surname and the first name Stefan?

ANSWER: **Zweig** [accept Stefan **Zweig** or Arnold **Zweig**] (The second sentence refers to *The Post Office Girl* by Stefan Zweig.)

<HG, European Literature>

14. An epigram states that a statue of a real-life ruler who was partially named for this deity "received the spouse in silence so that the fair Sabina might come back again." The foreign princess Tadukhipa was sent to marry a ruler named for this deity, who reciprocated with wooden statues instead of gold. A "singing" statue known as the Colossus of Memnon depicts a ruler named for this deity. A body known as the "Elder Lady" in the tomb of a ruler named for this deity belonged to his Great Royal Wife, Tiye ("TEE-yay"). This deity provides the [emphasize] *original* name of an Eighteenth Dynasty pharaoh who later changed it, moved his capital to Amarna, and venerated the god Aten. For 10 points, Tutankhaten changed his name to refer to what Egyptian god fused with Ra at his precinct in Karnak?

ANSWER: **Amun** [or **Ammon** or **Amana** or **Amen** or **jmn** or **Hammon**; accept **Amun-Re** or **Amun-Ra**; accept **Amenhotep** or **Amenophis**; accept Tutank**hamun**; prompt on **Memnon** until read by asking "what deity provided the name of the real-life ruler depicted?"; reject "Aten"; reject "Ra"] (The first line refers to an epigram by Julia Balbilla about one of the Colossi of Memnon, which depict Amenhotep III; Sabina is Vibia Sabina, Hadrian's wife.)

<UW B, Other History>

15. A variation of this quantity is ideally maximized and minimized for "plug flow" and "continuous flow stirred tank" reactor configurations. Along with turnover frequency, reactor performance is often measured using the "space-time" form of this quantity. Exothermic reactors operate at a temperature that balances the tradeoff between rate and this quantity. For batch reactors, this quantity equals the product of conversion and selectivity. Green chemists use a variation of this quantity that accounts for byproducts called "atom economy." In organic chemistry labs, failing to vaporize any remaining solvent can make measurements of this quantity exceed 100 percent. For 10 points, name this quantity that describes how much of a reactant was converted into product.

ANSWER: chemical **yield** [or reaction **yield**; accept percent **yield** or theoretical **yield** or actual **yield**; accept space-time **yield**; prompt on **atom economy** until read]

<MY, Chemistry>

16. In an experiment testing this faculty, the anterior cingulate cortex's activation led to a Gratton effect. Fish facing either left or right are featured in a test of a form of this faculty by Barbara and Charles Eriksen. It's not hearing, but Colin Cherry defined an effect of this faculty by conducting dichotic listening experiments. Changes in this faculty can result in an orientation mechanism called "inhibition of return." According to theories by Broadbent and Treisman, a variant of this faculty results from a "bottleneck filter." The "selective" form of this faculty is the subject of the cocktail party effect. A video that tests this faculty depicts people passing basketballs as a gorilla walks between them. For 10 points, name this faculty that names a common deficit disorder abbreviated ADHD.

ANSWER: **attention** [accept **attention** deficit disorder or **attention** deficit hyperactivity disorder; accept selective **attention**; prompt on **ADD** or **ADHD** until "ADHD" is read by asking "what faculty is impaired in that disorder?"]
<Chicago B, Social Science>

17. Douglas J. Penick's retelling *The Oceans of Cruelty* loosely translates a story cycle from this country whose frame story involves a "corpse-spirit." In a story written in this modern-day country, a crab snaps the neck of a heron when he realizes the bird has been eating his fish friends instead of transporting them to a new pond. A collection written in this modern-day country includes a frame story about educating three dim-witted princes and is titled for its five-part structure. That collection of 2nd-century BCE animal fables from this country includes a tale that inspired a 19th-century story in which the title mongoose defends an English family from two cobras. For 10 points, what modern-day country is the setting of the *Panchatantra* and Rudyard Kipling's story "Rikki-Tikki-Tavi"?

ANSWER: **India** [or **Bhārat**; or Republic of **India**; or **Bhārat** Gaṇarājya; or **Hindustan**] (The collection in the first clue is the *Vetala Panchavimshati*, which are commonly known as the tales of Vikram and Betal.)
<TH, World Literature>

18. A player of this instrument scat-sang while smiling on "Major's Medley," his take on Slim Gaillard's song "Laughing in Rhythm." Israel Crosby played this instrument for Ahmad Jamal's band on his version of "But Not For Me." The drummer Dannie Richmond backed up a player of this instrument on songs like "Jelly Roll" and "Boogie Stop Shuffle." A player of this instrument wrote the gospel-style song "Better Git It In Your Soul" for an album whose title riffs on Latin declensions. This instrument was played on over 2,000 recording sessions by Ron Carter. A player of this instrument wrote the protest song "Fables of Faubus" and a tribute to the headwear of Lester Young. For 10 points, name this instrument played by the composer of "Goodbye Pork Pie Hat," Charles Mingus.

ANSWER: upright **bass** [or double **bass**; reject "bass guitar"] ("Major's Medley" is by Major Holley.)
<AP, Other Fine Arts>

19. A "Record" of this good was written by the creator of a "dragon tribute" type of it, the famous calligrapher Cai Xiang ("tsai sh'YAHNG"). A network of trade routes known as the "Southern Silk Road" was named for horses and this good. Emperor Huizong ("hway-dzong") of Song wrote an influential "Grand Treatise" on this good, in which he laid out criteria for "competitions" focused on this good. The Rinzai monk Eisai ("AY-sigh") is said to have introduced this good to Japan from China, whose ritualized preparation of it is known as *gongfu*. Lu Tingcan wrote a "sequel" to a "Classic" about this good by Lu Yu, which details its mythical discovery by Shennong after looking into his pot of water. For 10 points, in China and Japan, what drink is presented in elaborate namesake ceremonies?

ANSWER: **tea** [or **chá** or **ocha**; accept **tea** culture; accept **tea** ceremonies; accept *The Classic of Tea* or *Chájing*; accept *Grand Treatise on Tea* or *Dàguān Chá Lùn*; accept the **Tea** Horse Road or **Chámadao**; accept *The Record of Tea* or *Chá Lù*]

<AK, World History>

20. SAR405 regulates this process by inhibiting Vps34, which activates a protein complex containing MLST8 and PRAS40. HSC70 initiates one form of this process by binding to proteins with a KFERQ (“K-F-E-R-Q”) motif and directing them to a LAMP2A multimeric complex. That chaperone-mediated form of this process is important for regulating cells under mechanical stress like muscle cells. By phosphorylating ULK1, mTOR (“M-tor”) downregulates this process. A study of this process earned Yoshinori Ohsumi a Nobel Prize in 2016. In yeast, this process is regulated by ATG proteins, and may be induced via starvation. During this process, large vesicles bind to lysosomes, whose hydrolytic enzymes break down defective proteins and organelles. For 10 points, name this process in which a cell digests its own components.

ANSWER: **autophagy** [or **autophagocytosis**; reject “phagocytosis”]

<Ohio State A, Biology>

Bonuses

1. Four phrases from the Sutra of Perfect Enlightenment are included in a collection of 100 of these texts, the *Book of Equanimity*. For 10 points each:

[10e] Name these texts collected in *The Gateless Gate*. “What is the sound of one hand clapping?” is an example of these short dialogues popular in Zen Buddhism.

ANSWER: **koans** [or ***gong’an***; or ***hwadu***; prompt on **lessons** or **parables**]

[10m] A koan from the *Book of Equanimity* simply consists of a quote from this text about being “despised” by “the people of this world.” This text consists of a dialogue between Buddha and his disciple Subhūti about how reality is illusory.

ANSWER: **Diamond** Sutra [or **Vajra** Sutra; or **Vajracchedika** Sutra; or **Vajra** Cutter Sutra]

[10h] In another koan from the *Book of Equanimity*, Sozan compares this concept to “a well looking at a donkey.” Sodh Candasaro founded a Thai tradition named for this concept, which is grouped with two other aspects of being that are named for *sambhoga* and *nirmana*.

ANSWER: ***dharmakaya*** [or ***dhammakaya***; or ***fashen***; or ***hosshin***; or the ***dharm* body**; accept the **truth body** or **reality body**; prompt on **bodies**; prompt on ***dharm***; prompt on the ***trikaya***]

<Chicago B, Religion>

2. Shaun compares life in one of these places to *Las Meninas* in a Samantha Harvey novel set in one of these places that won the 2024 Booker Prize. For 10 points each:

[10m] Name this sort of place where the psychologist Kris Kelvin is visited by a copy of his dead wife sent by a sentient ocean. That novel set in this sort of place is *Solaris* by Stanisław Lem (“stah-NEE-swoff lem”).

ANSWER: **space stations** [or research **stations** in **space**; accept **spaceships**; accept International **Space Station** or **ISS**; accept **Solaris Station**; prompt on research **stations** or **research facilities**]

[10e] Lem also explored alien contact in a novel titled *The Man from* [this planet]. This planet is the setting of a Ray Bradbury novel titled for its “Chronicles.”

ANSWER: **Mars** [accept *The Man from* **Mars** or *The* **Martian** Chronicles]

[10h] Lem wrote more lighthearted stories of space travel in his series *The Star Diaries*, which features the adventures of this recurring Lem character, who also appears in the novel *The Futurological Congress*.

ANSWER: Ijon **Tichy** (“EE-yohn TEE-hee”) [or **Ijon** Tichy]

<Chicago B, European Literature>

3. Lax pairs can be used to solve for the equations of motion in systems with this property. For 10 points each:

[10m] Name this property of dynamical systems that have as many constants of motion as degrees of freedom, thus preventing chaotic orbits. Systems with this property, as their name implies, tend to be solvable analytically using quadratures.

ANSWER: **integrability** [or **integrable**; accept complete **integrability**]

[10h] Lax pairs were introduced to solve this standard integrable PDE. This equation is the continuum limit of the Fermi–Pasta–Ulam problem and can be solved analytically using a squared hyperbolic secant function.

ANSWER: **KdV** equation [or **Korteweg–De Vries** equation]

[10e] The KdV equation is solved by applying an “inverse transform” named for this process, which is also the basis for solving the Lax equation. Classical examples of this process include ones named for Rayleigh and Compton.

ANSWER: **scattering** [accept inverse **scattering** transform; accept Rayleigh **scattering** or Compton **scattering**]

<Chicago B, Physics>

4. This national monument in a state's Great Rift is the home of the largest basaltic lava field in the mainland United States. For 10 points each:

[10h] Name this national monument that contains the deepest open rift crack in the world. This monument, which contains many spatter cones formed by volcanic activity, is a designated Dark Sky Park.

ANSWER: **Craters of the Moon** [or **Craters of the Moon** National Monument and Preserve]

[10m] Another important volcanic site in the US is this mountain in California's far north. The Klamath believe this mountain is home to the Spirit of the Above World, while others believe it is home to a hidden city of Lemurians.

ANSWER: Mount **Shasta** [accept **Waka-nunee-Tuki-wuki** or **Uytaahkoo**]

[10e] This US volcano, whose summit is the highest point in Hawaii, is just 38 meters higher than its larger neighbor Mauna Loa.

ANSWER: **Mauna Kea** [accept **Mauna a Wakea**]

<Ohio State A, Geography>

5. According to Zosimus, the last of these people reproached Serena, the wife of Stilicho ("STILL-ick-oh"), for taking a necklace from a statue of Rhea and wearing it herself. For 10 points each:

[10e] Name these priestesses who tended a sacred hearth in Rome.

ANSWER: **Vestal Virgins** [or **Vestālēs** or **Vestālis**; accept priestesses of **Vesta**]

[10h] This panegyrist ("pan-uh-JEER-ist") at Honorius's court praised Stilicho as "surpassing all the candidates of the whole world" to be wedded to Serena. This poet's other works include accounts of the war against Gildo and Stilicho's Gothic war against Alaric.

ANSWER: **Claudian** [or Claudius **Claudianus**; prompt on **Claudius**]

[10m] Historians have questioned Claudian's claim that this emperor chose Stilicho as Serena's husband for his military capability, arguing instead that Serena chose him herself. The temple of Vesta was closed due to this emperor's persecution of pagans in the 390s CE.

ANSWER: **Theodosius I** [or **Theodosius** the **Great**; prompt on **Theodosius**]

<AT, Other History>

6. Per a model named for this statistician, the fundamental problem of causal inference states that it is impossible to observe the effect of more than one treatment on a subject and to directly observe causal effects. For 10 points each:

[10h] Name this Harvard statistician whose causal model uses Jerzy Neyman's ("YAIR-zhuh NAY-min's") potential outcomes framework and a probabilistic assignment mechanism to estimate missing counterfactuals.

ANSWER: Donald **Rubin** [or Donald Bruce **Rubin**]

[10m] When non-compliers exist, these variables can be used to estimate causal relationships. These variables must be correlated with endogenous explanatory variables and are subject to the exclusion restriction.

ANSWER: **instrumental** variables [or **IV**]

[10e] Non-compliance can necessitate adjusting for post-treatment covariates by using the stratified form of this technique. This technique involves selecting individuals at random from a population.

ANSWER: **sampling** [accept stratified **sampling**]

<Chicago B, Social Science>

7. Public outrage over this practice in New York City led to a 1788 riot during which John Jay was reportedly hit over the head with a rock. For 10 points each:

[10m] Name this practice that inspired the passage of “bone bills” in several states, as introduced by the president of the American Chemical Society, John William Draper.

ANSWER: **body snatching** [accept equivalents like **stealing corpses** or **digging up bodies**; or **cadaver** research; prompt on grave **robbing** or **stealing** by asking “what objects were stolen?”]

[10h] In 1878, the body of an Ohio congressman with this surname was snatched by a medical school. A senator with this surname failed to become Indiana’s governor in 1876, partly because he wore gloves to protect against infection.

ANSWER: **Harrison** [accept John Scott **Harrison**; accept Benjamin **Harrison**]

[10e] Legislation was passed allowing schools such as the Winchester Medical School to use the cadavers of executed criminals, though it was burned down after John Brown raided this federal armory in Virginia.

ANSWER: **Harpers Ferry**

<UW B, American History>

8. Answer the following about the construction of the p-adic numbers, for 10 points each.

[10e] The p-adic numbers can be formally defined as one of these constructs expressed using a rational times all powers of p . Taylor and Maclaurin name examples of these expansions used to represent smooth functions.

ANSWER: power **series** [accept formal **series**; prompt on infinite **summation**]

[10m] Under the p-adic norm, the p-adics are a completion of the rationals, meaning that each of these sequences converges to a limit in the set. In one of these sequences, all terms past a certain point become arbitrarily close.

ANSWER: **Cauchy** (“KO-shee”) sequences

[10h] To obtain other completions in the field of fractions, one can localize a type of integral domain named for this mathematician. A construction named for this mathematician partitions the rationals into “left” and “right” sets.

ANSWER: Richard **Dedekind** [accept **Dedekind** domain or **Dedekind** cut]

<AR, Other Science>

9. Answer the following about ballets titled for the color red, for 10 points each.

[10e] This politician and his wife watch the ballet *The Red Detachment of Women* in a John Adams opera that fictionalizes his 1972 visit to China.

ANSWER: Richard **Nixon** [or Richard Milhous **Nixon**; accept **Nixon in China**]

[10m] Reinhold Glière’s ballet *The Red Poppy* popularized the *yablochko* (“YA-blutch-kuh”), or “little apple,” a Russian folk dance associated with people of this profession. In the UK, people of this profession often performed the hornpipe dance.

ANSWER: **sailors** [accept Russian **sailors**’ dance or “Dance of the **Sailors** from the Soviet Ship”; accept **Sailor**’s Hornpipe; accept **mariners**]

[10h] This choreographer used Bernard Herrmann’s film scores for the music of a ballet adaptation of the Powell and Pressburger film *The Red Shoes*. Male dancers play the swans in this choreographer’s version of *Swan Lake*.

ANSWER: Matthew **Bourne** [or Matthew Christopher **Bourne**]

<AP, Other Fine Arts>

10. Among the first collections of poetry in this language are John Solilo's *Izala* and S. E. K. Mqhayi's ("um-KAH-yee's") *Imihobe nemibongo*. For 10 points each:

[10e] Name this Bantu Nguni language of South Africa related to Swazi, Ndebele ("in-DEB-eh-leh"), and Zulu. This language's oral poets of the izibongo tradition make use of click consonants represented by the letters C, X, and Q.

ANSWER: **Xhosa** ("KAW-suh") [or isi**Xhosa**]

[10h] Scholarship on Xhosa izibongo poetry uses this English term to describe its genre. Yoruban oriki and Shona nhétémbo belong to this broad African tradition that involves using lists of compound epithets to highlight a person, animal, or object.

ANSWER: **praise** poetry [accept **praise** singing]

[10m] An izibongo praise poem about this person describes how he "raged among the large kraals." This person is the subject of an oral epic translated by Mazisi Kunene and a novel by Thomas Mofolo.

ANSWER: **Shaka** [or **Shaka** Zulu; or **Tshaka**; or **Chaka**; or **Shaka** kaSenzangakhona; accept *Emperor **Shaka** the Great*]

<TH, World Literature>

11. The Mumboism movement formed in this modern-day country after Onyango Dunde claimed he was swallowed by a serpent spirit. For 10 points each:

[10e] Name this country whose Kikuyu people's religious beliefs were analyzed in an anthropological study by its future president, Jomo Kenyatta.

ANSWER: **Kenya** [or Republic of **Kenya**; or Jamhuri ya **Kenya**; accept British **Kenya**]

[10m] The spirit medium Bokero claimed that he was possessed by the snake spirit Hongo, who urged him to lead this rebellion in German East Africa named for its followers' belief in a mixture that turned bullets into water.

ANSWER: **Maji Maji** Rebellion [or **Maji Maji** Aufstand; or Vita Vya **Maji Maji**]

[10h] Alice Auma claimed to be possessed by the spirit Lakwena and that her followers could turn bullets into water while leading the Holy Spirit Movement against this leader. This leader immediately violated the Nairobi Agreement by overthrowing Tito Okello.

ANSWER: Yoweri **Museveni** [or Yoweri Kaguta **Museveni** Tibuhabwe]

<AK, World History>

12. This book's introduction criticizes American activity in the Cold War by comparing mankind to cannibalistic sea slugs from a Disney documentary. For 10 points each:

[10h] Name this book that includes chapters analyzing the diaries of Kate Stone and Mary Chesnut. This 1962 book of literary criticism also examines *Miss Ravenel's Conversion* by J. W. de Forest.

ANSWER: ***Patriotic Gore***

[10e] Edmund Wilson's book *Patriotic Gore* explores the literature of this conflict, such as *Leaves of Grass* and *Uncle Tom's Cabin*.

ANSWER: **Civil War** [or American **Civil War**]

[10m] In the chapter on *Miss Ravenel's Conversion*, Wilson also discusses de Forest's essay in *The Nation*, in which he coined this term. A controversial *Time* magazine cover associated Jonathan Franzen with this concept.

ANSWER: **Great American Novel** [or **GAN**; accept "**Great American Novel**ist"]

<Ohio State A, American Literature>

13. Incomplete measurements from CCDs in this technique can lead to a loss of information called the “phase problem.” For 10 points each:

[10e] Name this technique that uses low-wavelength light to probe lattice structures. Rosalind Franklin used this technique to determine the structure of DNA.

ANSWER: **X-ray crystallography** [or **X-ray diffraction** or **XRD**]

[10m] X-ray crystallography is limited in scale by the diffraction limit for this quantity usually measured in angstroms. A coefficient of 1.22 appears in the Rayleigh criterion for this quantity.

ANSWER: **resolution** [accept angular **resolution**; accept **resolving power**; prompt on **angle**]

[10h] Molecular modelling using X-ray crystallography uses this quantity defined by summing differences in structure factors over all reflections. A “free” form of this quantity is usually one tenth the resolution.

ANSWER: **R-factor** [or **R-value**; accept **R-free**; accept **discrepancy index**]

<Ohio State A, Chemistry>

14. These people were depicted as exaggerated caricatures with large heads, crossed eyes, and grimaced frowns in prints by Sharaku. For 10 points each:

[10h] Name these people who were the focus of prints called *yakusha-e* (“YAHK-sha-eh”). The Torii school specialized in depictions of these people, who were the most popular subjects of *ukiyo-e* (“oo-kee-yo-EH”) prints alongside *bijin*, or “beauties.”

ANSWER: kabuki **actors** [or **actresses**; accept **onnagata** or **oyamas**]

[10m] Toyokuni I pivoted a school named for this surname to focus on actor prints after the death of its founder, Toyoharu. This surname was taken by the artist Kuniyoshi and the artist of *The Fifty-three Stations of the Tōkaidō*.

ANSWER: **Utagawa** [accept **Utagawa** school; accept **Utagawa** Kuniyoshi or **Utagawa** Hiroshige]

[10e] Hiroshige, who made actor prints as a young member of the Utagawa school, later shifted to landscapes like his “Thirty-six Views of” this landmark. Hokusai’s series of the same name includes *The Great Wave off Kanagawa*.

ANSWER: Mount **Fuji** [or **Fugaku** or **Fuji-san**]

<Chicago B, Painting and Sculpture>

15. To get around a promise to not warn an “exceedingly-wise” man about this event, a god instead issued the warning to the reed wall of his hut. For 10 points each:

[10e] Name this event that flattened the earth and turned humans into clay. In his namesake epic, Gilgamesh asks for the secret to immortality from a man who survived this event named Utnapishtim, which inspired a story in Genesis.

ANSWER: Great **Flood** [or **deluge**]

[10h] The flood myth in the *Epic of Gilgamesh* is likely derived from the story of this earlier epic’s title character. This epic begins with minor gods rebelling because they are tired of digging ditches, so they kill Geshtu and use his blood to create humanity.

ANSWER: **Atra-Hasis**

[10m] This god warned Atra-Hasis about the flood, and suggested killing Geshtu to create humanity. This water god, who was worshipped in the Abzu temple, is the consort of Ninhursag.

ANSWER: **Enki** [or **Ea**]

<UW B, Mythology>

16. *Two answers required.* A baby's lungs are considered mature if the ratio between these two molecules is more than 2-to-1. For 10 points each:

[10h] Name these two compounds. One of these compounds is found in the lipid that surrounds nerve cell axons, and the other is a type of amphiphilic yellow-brown fatty substance found in animal tissue.

ANSWER: **sphingomyelin** AND **lecithin** ("LESS-uh-thin") [accept **lecithin-sphingomyelin** ratio; prompt on L/S ratio; prompt on partial answers; reject "myelin"]

[10e] The lecithin-sphingomyelin ratio is tested using this substance. This liquid fills the "sac" around a fetus.

ANSWER: **amniotic** fluid [accept **amniotic** sac]

[10m] The centesis of amniotic fluid to test genetic material is usually safer than a "chorionic sampling" procedure named for these structures. These structures can atrophy from inflammation due to conditions like celiac disease.

ANSWER: **villi** [accept micro**villi**; accept chorionic **villus** sampling]

<Chicago B, Biology>

17. In 2024, Christian Thielemann took over as principal conductor of this city's Staatskapelle orchestra from Daniel Barenboim. For 10 points each:

[10e] Name this capital city whose philharmonic orchestra was briefly led by Leo Borchard before he was shot by American occupiers after its conductor Wilhelm Furtwängler fled from Gestapo arrest.

ANSWER: **Berlin** [accept West **Berlin**; accept **Berlin** Philharmonic or **Berlin** Philharmoniker or Staatskapelle **Berlin**]

[10h] Borchard was replaced by this conductor, a pupil of Furtwängler. The Berlin Philharmonic's election of Herbert von Karajan so angered this Romanian conductor that he did not return to the orchestra for nearly 50 years.

ANSWER: Sergiu **Celibidache** ("CHELL-ee-bee-DAH-kay")

[10m] Arturo Toscanini, who founded an early orchestra operated by one of these companies, criticized Wilhelm Furtwängler for his perceived Nazi association. Frankfurt's *hr-Sinfonieorchester* ("H-R symphony orkester") is named for its management by one of these companies.

ANSWER: **radio** network [or radio **network** or broadcasting **network** or public **broadcaster**; accept **radio** station; accept **radio** symphony; accept **TV** network; prompt on **NBC** or **National Broadcasting Corporation** or **Hessischer Rundfunk** by asking "what kind of business is that?"; prompt on **media** company] (Toscanini founded the NBC Symphony Orchestra.)

<MY, Classical Music>

18. A 1643 order named for this process designated the Stationer's Company as the state censor of media in exchange for a monopoly over printing. For 10 points each:

[10h] Name this process, which also titles a 1662 Act that gave censorship powers to the royalist Roger L'Estrange.

A 1737 Act named for this process granted control over it to the Lord Chamberlain of the Royal Household.

ANSWER: **Licensing** of the Press [accept **Licensing** Order of 1643 or **Licensing** of the Press Act of 1662]

[10m] The Licensing Act reassigned the censoring of the press previously handled by this court of royal advisors, which was abolished in 1641. This court was named for the gold decorations on its otherwise blue ceiling.

ANSWER: **Star Chamber** [or **Camera stellata**]

[10e] The Star Chamber was briefly revived by the second Stuart king with this name, who was overthrown by the Glorious Revolution. Scotland and England were first united under an earlier Stuart king with this name.

ANSWER: **James** [or **James** VI and I; or **James** Francis Edward Stuart]

<EC, European History>

19. A posthumous 2013 book that collects John Haugeland's writings on Martin Heidegger has a title that references both Dasein ("DAH-zyne") and this process. For 10 points each:

[10h] Heidegger's notion by which the meaning of things "opens up" in their context is typically translated as a "world" form of what process? Nikolas Kompridis drew on Heidegger to theorize this process's "reflective" form.

ANSWER: **disclosure** [accept word forms like **disclosedness**; accept **Erschlossenheit**; accept *Dasein* **Disclosed**]

[10e] The claim that "every disclosure of being as the transcendent is transcendental knowledge" appears in this 1927 book considered Heidegger's magnum opus.

ANSWER: ***Being and Time*** [or ***Sein und Zeit***]

[10m] This philosopher attacked Heidegger's "world disclosure" as devaluing reason in *The Philosophical Discourses of Modernity*. This member of the Frankfurt School theorized communicative rationality with Karl-Otto Apel.

ANSWER: Jürgen **Habermas**

<TM, Philosophy>

20. A character in this novel unknowingly models for the likeness of an android under the guise of sitting for a portrait. For 10 points each:

[10m] Name this novel whose title character serves as an Artificial Friend to the sickly child Rosie and sabotages a construction machine.

ANSWER: ***Klara and the Sun***

[10e] *Klara and the Sun* is by this Japanese-British author, whose other science fiction and fantasy novels include *The Buried Giant* and *Never Let Me Go*.

ANSWER: Kazuo **Ishiguro**

[10h] The plot of *Klara and the Sun* is paralleled by this author's 1944 novel *Sirius*, in which a hyper-intelligent dog becomes the companion of the girl Plaxy. This British sci-fi novelist explored evolution over long time scales in *Starmaker* and *Last and First Men*.

ANSWER: Olaf **Stapledon** [or William Olaf **Stapledon**]

<UW B, British Literature>