

2021 ACF Regionals

Packet A by Berkeley A, Waterloo B, CWRU A, Rutgers B, WUSTL C

Edited by Jaimie Carlson, Annabelle Yang, Hari Parameswaran, Hasna Karim, Jonathan Tran, Jordan Brownstein, Michael Kearney, Natan Holtzman, Nick Dai, Stephen Eltinge, and Tim Morrison, with contributions from Olivia Murton and Jon Suh

Tossups

1. *Original language term required.* In Surah Ash-Shuraa, this term describes the manner of Allah’s revelation to mortals. The first Qur’anic use of this term describes the division of Believers from Unbelievers, and another instance describes the barrier created by Unbelievers’s hardened hearts. The instruction to “Be not soft of voice” spurred debate about whether the voice is part of the *‘awrah* that this concept regulates. Surah an-Nur’s instruction for men to “lower their gaze” is an oft-cited example of this concept. A practice named for this term may only have applied to women like Umm Salama and Aisha. Men must cover between their navel and knees to satisfy this concept, which the *burqa* also helps fulfill. For 10 points, give this term that refers either to regulations on modesty or the literal veil worn by Muslim women.

ANSWER: **hijab** [or **hijāb**] (The Qur’an never uses the word *hijāb* in reference to women’s clothing. Some modern scholars have argued that the practice of veiling, which has been conflated with *hijab*, was only required of Prophet Muhammad’s wives.)

<Religion>

2. Shattuck-Hufnagel et al. found that “hits” in these constructs often align with pitch accents. The “beat” variety of these constructs affects the perception of prosodic (“pruh-ZAH-dik”) prominence. The eggplant emoji is an emblematic one of these constructs, while the birthday emoji is illustrative, according to Gawne and McCulloch. “The forks” is an Australian term for an obscene symbol of this type, which forms a minimal pair with a similar one that indicates peace or victory. Versions of these actions that have been co-opted from Black communities include the dap greeting, clapping on syllables, and the high-five. For 10 points, name these non-verbal communicative actions that often accompany speech, examples of which include pointing or waving.

ANSWER: **gestures** [or word forms; or hand **gestures**; accept **gesticulation**; prompt on signs or hand signs; prompt on signals or hand signals; prompt on movements or hand movements; prompt on body language; prompt on non-verbal communication or equivalents until “non-verbal” is read; do not accept or prompt on “sign language”]

<Social Science>

3. *Description acceptable.* In a mechanism meant to perform this task, Kasparian et al. used lasers to encourage hydroxyl radical formation. A variant of *Pseudomonas syringae* can be used for this purpose due to an INA protein on its surface. One study used burn-in-place and ejectable flares to perform this process, then used radar to quantify its effectiveness. An array of metal tubes that falsely claimed to collect “orgone energy” were used for this purpose by Wilhelm Reich. Schaefer and Langmuir (“LANG-myoor”) originated one form of this process, while another process with this purpose created by Bernard Vonnegut was used before the 2008 Beijing Olympics. In a process with this goal, planes drop potassium and silver iodide or dry ice to provide nuclei for water droplet condensation. For 10 points, name this goal of cloud seeding.

ANSWER: **causing rain** [or **making it snow, hail, sleet**, etc.; or causing **artificial precipitation**; or **cloud seeding** or **cloudbusting** until “cloud seeding”; prompt on weather control or weather manipulation or changing the weather by asking “what sort of weather is being caused?”; prompt on making clouds or cloud formation by asking “for what purpose?”; prompt on partial answer] (INA stands for ice-nucleation-active. The burn-in-place study was by Friedrich et al.)

<Other Science (Earth Science)>

4. *Description acceptable.* This event is described in the story *Going Home* from the film anthology *My People, My Country*, which describes an awkward 12-second silence during it. In anticipation of this event, the company Jardine Matheson re-domiciled to Bermuda. Directly after this event, Martin Lee declared “the flame of democracy has been ignited and is burning in the hearts of our people.” In its last foreign mission, Elizabeth II’s royal yacht HMY *Britannia* returned Chris Patten from this event, after which the Basic Law came into effect. This event, which resulted from the end of the 99-year lease on the New Territories, marked the beginning of the “one country, two systems” policy. For 10 points, name this event on July 1, 1997, in which the United Kingdom ceded a colonial possession to China.

ANSWER: **transfer** of sovereignty of **Hong Kong** from the United Kingdom to China [or equivalents; or the **Handover**; or the **Return**]
<Other History>

5. In a grand opera titled for this ethnicity, two main characters are executed using a boiling cauldron. Opera singers of this ethnic background have included Beverly Sills and Richard Tucker. A warrior of this ethnicity is the subject of the chorus “See, the conqu’ring hero comes.” An unfinished twelve-tone opera is titled for two brothers of this ethnicity, with one of their names misspelled due to the composer’s fear of the number 13. An 1850 essay published in *Neue Zeitschrift für Musik* (“NOY-uh t’SITE-shrift fur moo-ZEEK”) claimed that these people are unsuited to be good composers. These people sing the chorus “Va, pensiero” in Verdi’s opera *Nabucco*. For 10 points, Richard Wagner condemned the musical work of people of what ethnicity, who are depicted in the operas *Moses und Aron* and *Judas Macabbeus*?

ANSWER: **Jewish** people [or **Jews**; or **Hebrews**; or **Israelites**; or **Judeans**; accept *La Juive* or *The Jewess*; prompt on **French**, **Italian**, **Swiss**, **Roman**, or **German** by asking “that is their nationality, but what is their ethnicity?”]
<Other Arts (Auditory)>

6. This character claims that centaurs and fauns are the products of inter-species reproduction. This character gets a door slammed in his face after consulting a dervish who tells him “Be silent.” After returning a flower to a woman, this character is sold into slavery. This character is thought to be dead until he screams when dissected by a surgeon. This man, who gives a maid “a lecture in experimental philosophy,” cites the introduction of chocolate to Europe as justification for the existence of syphilis. This professor of “metaphysico-theologo-cosmolo-nigology” survives being hanged at an *auto-da-fé* and refuses to help the drowning Jacques, since Lisbon’s harbor was created to drown him. For 10 points, name this tutor of *Candide* who claims that we live in the “best of all possible worlds.”

ANSWER: Dr. **Pangloss**
<European Literature>

7. Instances of this property that were measured by Pan Jianwei with beta-barium borate crystals are described by graph states with up to 12 nodes. When this property is “distillable,” it can be extracted from a set of identical objects that are then replaced with objects that maximally have this property. Objects with this property are distributed before engaging in superdense coding. A state has this property if and only if its Schmidt rank exceeds one. Measuring the spin of particles with this property yields results that are at odds with intuition, according to the EPR paradox. This property’s presence between qubits (“Q-bits”) is key to the operation of quantum computers. For 10 points, name this correlation between quantum states, dismissed by Einstein as “spooky action at a distance.”

ANSWER: quantum **entanglement** [or word forms like **entangled**]
<Physics>

8. *Description acceptable.* Richard Taylor’s conclusions about his version of this story, which adds an intravenous drug injection, are rejected by Susan Wolf’s bi-partite “Fitting Fulfillment View.” An essay by Thomas Nagel calls another author’s treatment of this story “romantic and self-pitying” for its claim that any fate can “be surmounted by scorn.” That writer studied this story’s “breathing-space... the hour of consciousness,” which precedes a “struggle” that is “enough to fill a man’s heart.” The subject of this story is compared to Kirilov from *The Possessed* in an

essay which claims that the “one truly serious philosophical problem” is suicide. For 10 points, “one must imagine” this story’s subject “happy,” according to Albert Camus’s essay about what “myth” of a king condemned to roll a boulder?

ANSWER: the myth of **Sisyphus** [or **Sisyphus** being condemned to roll a boulder up a hill; or equivalents; accept *Le Mythe de Sisyphé*] (The Nagel essay is “The Absurd.”)

<Philosophy>

9. Supporters of this politician who called themselves the “Old Guard” wore medals inscribed with “36 Ballots.” John Russell Young urged this man to withdraw from an election after writing an account of his European tour called *Around the World with this man*. This man was lampooned in a cartoon as a trapeze artist holding up men like George Robeson. In an election, this “Galena tanner” ran on the “Working Man’s Banner” with his running mate Henry Wilson, who was later implicated for buying artificially inflated Union Pacific stock during this man’s presidency. This politician declined to run for third terms in 1876 and 1880 after the Crédit Mobilier and Whiskey Ring scandals. For 10 points, name this Union general who served as U.S. President during Reconstruction.

ANSWER: Ulysses S. **Grant** [accept *Around the World with General Grant*]

<American History>

10. A poem by this author is recited by a “man with clouded eyes” who “picks up the rain” in the poem “Map of the New World.” A play based on this poet’s work is linked to a Trinidadian *Ramleela* performance at the opening of a Nobel lecture subtitled for “fragments of memory.” The author of a long poem asks this man for a “conch’s moan” before learning the pronunciation of his name from his ex-lover. The pilot of a “schooner (“SKOO-ner”) beating up the Caribbean” is likened to one of this author’s characters in the poem “Sea Grapes,” which repeatedly references his works. A poem titled for this man imagines him as the blind poet Seven Seas and depicts two Saint Lucian (“LOO-shin”) fishermen who feud over Helen. For 10 points, Derek Walcott frequently referenced what ancient poet of the *Iliad*?

ANSWER: **Homer** [or **Homeros**; accept **Omeros**] (The second line refers to Walcott’s play *The Odyssey*, which he references in his speech “The Antilles: Fragments of Epic Memory.”)

<World/Other Literature>

11. Cdt1 alleviates the autoinhibitory effect of subunit 6 of one of these proteins, enabling its “licensing” onto substrate as a left-handed open ring. A motif of “aspartic acid, glutamic acid, alanine, aspartic acid” names a family of these kinds of proteins. Defects in an exonuclease-containing protein of this type cause adult progeria. Werner syndrome results from defects in WRN, one of a class of these proteins that associate with type IA (“one-A”) topoisomerases called the recQ class. Some of these proteins, like the Mcm2-7 complex, form heterohexameric rings that sterically exclude half of their substrate. DnaB, a protein of this type, is loaded onto ori (“OR-ee”) sites and “fired” to initiate replication in S phase. For 10 points, name these enzymes that unwind double-stranded nucleic acids.

ANSWER: **helicases** [accept DNA **helicases**, RNA **helicases**, DEAD box **helicases**, or DEAH box **helicases**; prompt on Mcm2-7 or minichromosome maintenance complex 2-7 until read; prompt on DEAD box or DEAH box proteins]

<Biology>

12. An artist with this primary profession sculpted a Breton woman cradling her grandson in a Pietà-esque pose in *Après la Tempête* (“ah-PRAY la tom-PET”). Girodet (“zhee-ro-DAY”) angrily painted a person with this profession accompanied by a turkey wearing a wedding ring and catching golden coins. Beetle wings made up an iridescent green and blue garment worn by a red-haired person with this profession in a Sargent painting. A person with this profession holds a palm branch beneath a Byzantine arch in the first of several works by Alphonse Mucha (“MOO-hah”) for Sarah Bernhardt. Pity and Terror accompany an enthroned woman in gold, whose model had this

profession, in Joshua Reynolds's *Sarah Siddons as the Tragic Muse*. For 10 points, Sargent depicted Ellen Terry, who had what profession, as *Lady Macbeth*?

ANSWER: **actresses** [or **actors**; or **thespians**] (Sarah Bernhardt sculpted *Après la Tempête* and contracted Mucha to create posters for several plays after his work for *Gismonda*; Girodet painted *Portrait of Mademoiselle Lange as Danae* after she demanded an earlier portrait be removed from the Paris Salon.)

<Painting/Sculpture>

13. An early Christian convert of this ethnicity wrote the "Bell Hymn." When a prophecy among these people regarding the rising of a blood-red sun did not happen, its believers said it would happen in eight days, as fictionalized by Zakes Mda's ("zayx muh-DAH's") *The Heart of Redness*. A preacher of this ethnicity led a group of "Israelites" who were killed in the Bulhoek ("BULL-hook") Massacre. The Bible was translated into the language of these people by Tiyo Soga. As part of a millenarian movement led by the prophet Nongqawuse ("nong-KA-woo-say"), these people killed their cattle, resulting in an 1857 famine. After losing a war to these people, the Boers embarked on the Great Trek. For 10 points, name this South African ethnic group, whose language contains many click consonants and is mutually intelligible with Zulu.

ANSWER: **Xhosa** ("KAW-sah") [or ama**Xhosa**; accept isi**Xhosa**]

<World History>

14. Ailill ("EYE-lill") threatens to kill Findabair if she cannot produce one of these objects, which is recovered by Fraíoch, in the *Táin Bó Fraíoch* ("tyne bo fray-eck"). Herodotus writes that Polycrates threw away one of these objects to avoid tempting fate. Another of these objects is thrown into the sea by Asmodeus. The brass and iron portions of that example of these objects are used to sign commands for good and bad jinn, respectively, by Solomon. In another story, Dushyanta is unable to remember his wife until presented with one of these objects recovered from a fish's belly. Odin owns one of these objects, which creates eight copies of itself every ninth night. For 10 points, Draupnir is what kind of jewelry, another of which was cursed by Andvari and retrieved by Sigurd from Fafnir's treasure?

ANSWER: **rings** [accept the **Seal** of Solomon] (Findabair's ring is recovered from a salmon's belly; Polycrates's ring also returned to him in a fish's belly, there is a similar story about the Seal of Solomon, and the story about Dushyanta is in *The Recognition of Shakuntala*.)

<Mythology>

15. After distributing a shipment of butter that was sent to one of these places, a woman smears some on a man to begin a multi-year affair. In the opening scene of that novel, a woman freezes to death while walking to one of these places after a drunk man falls asleep on top of her in his car. A veteran traumatized by his cousin's death in the Bataan Death March returns to a drought-stricken one of these places in a novel by the author of *Almanac of the Dead*. One of these places in Spokane ("spo-CAN") is the setting of many stories in a collection titled for two men who "Fistfight in Heaven." Louise Erdrich's *Love Medicine* and Leslie Silko's *Ceremony* are largely set in, for 10 points, what type of place, also the setting of Sherman Alexie's *The Absolutely True Diary of a Part-Time Indian*?

ANSWER: Native American **reservation** [or Indian **reservation**; accept **pueblo**; prompt on **rez**]

<American Literature>

16. A court ordered this man to pay damages to a federal legislator after a 2012 *Esquire* interview in which he repeated his popular slogan that one political party consisted of "crooks and thieves." Rubber ducks became a popular symbol of corruption after this man revealed a prime minister's luxurious estate in his YouTube documentary *He Is Not Dimon to You*. This man inquired about the color of a certain pair of underwear on a phone call recorded by Bellingcat. This activist, who was splashed with brilliant green dye while running for president in 2017, had FSB agents tailing him in Kaliningrad and Tomsk. For 10 points, name this opposition leader who nearly died from Novichok poisoning in August 2020 after an assassination attempt by the Russian state security service.

ANSWER: Alexei **Navalny** [or Alexei Anatolievich **Navalny**]

<CE/Geo/Other/Pop Culture>

17. In 1975, women in this country refused to go to work in an event alternatively termed “Women’s Day Off” or “Long Friday.” It’s not France, but this country’s Progressive and Social Democratic Parties joined forces to oppose joining NATO, a move supported by the activist group Campaign Against Militarism. Talks in this country collapsed over whether the ABM treaty restricted defense research strictly to laboratories. A French teacher in this country became the world’s first elected female president in 1980. In 1986, Mikhail Gorbachev and Ronald Reagan met in this country’s capital to discuss nuclear disarmament. This country fought over fishing rights with the United Kingdom during the Cod Wars. For 10 points, name this country in the North Atlantic, whose capital is Reykjavík.

ANSWER: **Iceland** [or **Ísland**]

<European History>

18. While sitting by a fire and gnawing at a turnip, this play’s protagonist is asked a barrage of questions like “Were you off east... fighting bloody wars for Kruger and the freedom of the Boers?” This play’s protagonist declares “if I’ve to face the gallows, I’ll have a gay march down” before squirming on the floor and biting a man’s leg. In this play, the protagonist relates how a man lifted a scythe at him when he refused to marry an old widow. Jimmy and the Widow Quin narrate an offstage mule race in this play. Like a different playwright’s *The Plough and the Stars*, this play premiered to riots at the Abbey Theatre. This play’s protagonist impresses Pegeen (“peg-EEN”) by claiming to have killed his father. For 10 points, the trickster Christy Mahon is the title character of what play by John Millington Synge (“sing”)?

ANSWER: *The **Playboy of the Western World***

<British Literature>

19. A piece by this composer contains a movement in which two tenors represent angels and are joined by a third tenor to symbolize the Trinity. To depict a battle in one work, this composer called for some of the earliest uses of pizzicato and tremolo as part of the “agitated style” or *stile concitato* (“STEE-leh cone-chee-TAH-toh”). This man’s madrigals such as *Cruda Amarilli* were criticized by Giovanni Artusi; those madrigals used a style in which lyrics govern music known as *seconda pratica*. He’s not Gabrieli, but this music director of St. Mark’s Cathedral reused the brassy opening *toccata* from his most famous opera in a 1610 sacred piece. This man composed *The Coronation of Poppea* and the *Vespers of the Blessed Virgin*. For 10 points, what Baroque composer wrote the earliest opera still regularly performed, *L’Orfeo* (“lor-FAY-oh”)?

ANSWER: Claudio **Monteverdi** [or Claudio Giovanni Antonio **Monteverdi**] (The first sentence refers to the *Duo Seraphim* from Monteverdi’s 1610 *Vespers*.)

<Classical Music>

20. A quantitative change in this physical process is measured to detect levels of metabolic activity in the MTT assay. A coefficient of seven-thirds appears in the formula for the shade number, which rates this process in welding safety equipment. The difference in the rate of this process for left- and right-circular polarized light is proportional to a sample’s molar ellipticity in circular dichroism (“dye-CROW-ism”). For conjugated compounds, the strength of this process is maximized at a wavelength predicted by the Woodward–Fieser rules. This process gives its name to a dimensionless quantity that is proportional to path length and concentration according to Beer’s law. For 10 points, spectrophotometry (“spectro-fo-TOM-metry”) measures the loss of incoming light energy to what type of attenuation with a strength denoted *A*?

ANSWER: **absorption** of light [accept **absorbance** or molar **absorptivity**; prompt on attenuation or molar attenuation coefficient until “attenuation” is read; prompt on extinction; prompt on color or color change by asking “what physical process does an instrument measure during that procedure?”; prompt on optical filtering by asking “what physical process happens in the filter?”; do not accept or prompt on “adsorption”]

<Chemistry>

Bonuses

1. In this novel, two characters notice that a billboard for Modern Bread has been replaced by a picture of the prime minister. For 10 points each:

[10h] Name this novel, in which Dina Dalal forges an inseparable relationship with the Darji tailors and her tenant Maneck Kohlah amid the turmoil of the Emergency.

ANSWER: *A **Fine Balance*** (by Rohinton Mistry)

[10e] In this other novel, the “magician’s ghetto” of Picture Singh is destroyed as part of the Emergency’s policies. Saleem Sinai is forced to undergo a vasectomy by Emergency officials in this Salman Rushdie novel.

ANSWER: ***Midnight’s Children***

[10m] After visiting India during the Emergency, this author wrote the second book in his Indian Trilogy. The pundit Jayaram harasses the protagonist of another of his novels, who was born “in the wrong way” and with six fingers.

ANSWER: V. S. **Naipaul** [or Vidiadhar Surajprasad **Naipaul**] (The second novel is *A House for Mr. Biswas*.)
<World/Other Literature>

2. Shibata Zeshin, who was known as the “master” of this material, developed a method for painting with it known as *urushi-e* (“oo-roo-shee-EH”). For 10 points each:

[10m] Name this material that is imitated with glossy black varnish on wood in the European technique of japanning. A sword pommel motif was often carved into Chinese *qidiāo* (“CHEE-d’yao”) made with red and black layers of this material.

ANSWER: **lacquer** [or **lacquerware**]

[10h] Gold powder is mixed with lacquer and then applied to cracks in this technique, which is informed by the aesthetic principle of *wabi-sabi* in “repairing” broken pottery while embracing flaws.

ANSWER: ***kintsugi***

[10e] In addition to pottery, Japanese lacquer was most often applied to this material. *Ukiyo-e* (“oo-kee-yo-EH”) were created by making prints using carved blocks of this material.

ANSWER: **wood** [or **woodblocks**; or **woodblock printing**; prompt on **blocks**; prompt on *mokuhanga*]

<Painting/Sculpture>

3. This leader successfully contained a smallpox epidemic while serving as regent for her brother, “the Merrie Monarch,” while he was on a world tour. For 10 points each:

[10h] Name this monarch who opposed the Reciprocity Treaty and led the “Stand Firm” movement.

ANSWER: Queen **Lili‘uokalani**

[10e] This country’s last monarch, Lili‘uokalani, was overthrown in a coup that replaced its Kingdom with an American-supported Republic of the same name.

ANSWER: Kingdom of **Hawai‘i** [accept Republic of **Hawai‘i**]

[10m] After reading the Blount Report, Grover Cleveland urged the Senate to restore the queen and asked this only president of the Republic to resign. This man refused to do so, remaining president until annexation.

ANSWER: Sanford B. **Dole**

<American History>

4. Answer the following about the chemistry of umami flavor, for 10 points each.

[10m] The savory flavor of umami is most commonly produced by this non-essential amino acid present in foods like cheese and soy sauce. It is provided along with fat and salt in bouillon (“BOO-yon”) cubes.

ANSWER: **glutamic acid** [or **glutamate**; accept monosodium **glutamate**; prompt on **MSG**]

[10e] Umami flavor is only produced by L-glutamate, which bears this relationship to the inactive D-glutamate. Enantiomers (“en-AN-tee-oh-mers”) are chiral (“KYE-rull”), non-superposable pairs of structures that have this relation to one another.

ANSWER: **mirror** images [accept **reflections** or **reflected** images; prompt on any answer mentioning **symmetry**]
[10h] Umami can also be derived from this nucleotide that contains a hypoxanthine (“hypo-zan-then”) unit. This purine derivative, often found in the first anticodon site of tRNAs, is a precursor in the biosynthesis of adenosine and guanosine.

ANSWER: **inosinic acid** [or **inosinate**; or **inosine** monophosphate; or **IMP**; accept **inosine**]
<Chemistry>

5. In the story “My Chivalric Fiasco,” a worker at one of these places is promoted after witnessing his boss’s rape of a coworker, but reveals the crime while on the drug KnightLyfe. For 10 points each:

[10h] Name this type of place. In another story, the psychotic veteran Samuel is hired to defend one of these places amid a rise in gang violence, but ends up killing the protagonist.

ANSWER: **theme park** [or **amusement park**; or **funfair**; prompt on **park** or **fair**; anti-prompt (ask “can you be less specific?”) on **CivilWarLand**]

[10e] In the latter story by George Saunders, the theme park that is “in Bad Decline” re-enacts events from this war. Ambrose Bierce’s experience in this war inspired stories like “An Occurrence at Owl Creek Bridge.”

ANSWER: American **Civil War** [accept “**CivilWar**Land in Bad Decline”]

[10m] A boy named Ambrose visits a Maryland amusement park with his family in this author’s highly metafictional story “Lost in the Funhouse.”

ANSWER: John **Barth**
<American Literature>

6. In a 1993 essay collected in *Medieval Queenship*, Janet Nelson examined the “monstrous regiment” of women that surrounded this non-Scottish ruler. For 10 points each:

[10e] Name this ruler. In her book *King and Emperor*, Nelson examines the context behind this ruler’s crowning as the first Holy Roman Emperor in 800 AD.

ANSWER: **Charlemagne** [or **Carolus Magnus**; or **Charles I**; prompt on **Charles**]

[10h] One of the women discussed in Nelson’s essay is this mother of Charlemagne, who orchestrated his marriage to Desiderata of Lombardy. She also negotiated peace between Charlemagne and his brother Carloman I.

ANSWER: **Bertrada** of Laon [or **Bertha Broadfoot**]

[10m] Though he portrays Bertrada in a positive light, this historian paints Charlemagne’s third wife Fastrada as a cruel queen. This historian chronicled the Frankish court in his *Vita Karoli Magni*.

ANSWER: **Einhard** [or **Eginhard**]
<European History>

7. Mozart’s four concerti for this instrument were written for his friend Joseph Leutgeb (“YO-zef LOYT-geb”). For 10 points each:

[10e] Name this middle-register brass instrument with coiled tubing. Players of this instrument often place a hand inside its flared bell.

ANSWER: French **horn** [accept German **horn**; accept Vienna **horn**; accept **horn** in F; accept natural **horn**; do not accept or prompt on “English horn”]

[10h] *Composer and number required.* In a threatening march within the first movement of this symphony, horns play in bass clef down to a low concert E-flat. Near the end of this work, violins repeat a high “A” more than 100 times.

ANSWER: Symphony No. **5** in D minor by Dmitri **Shostakovich** [or **Shostakovich**’s **Fifth** Symphony; prompt on partial answer]

[10m] In the scherzo of this composer’s Fifth Symphony, a horn soloist plays with the instrument’s bell facing up. That symphony in C-sharp minor by this composer also includes an *Adagietto* slow movement for strings and harp.

ANSWER: Gustav **Mahler**
<Classical Music>

8. They're not Amazons, but Michael Speidel identifies Freydis, daughter of Erik the Red, as one of these figures because she fought bare-breasted and terrified her enemies. For 10 points each:

[10m] Give these warriors who, according to Saxo Grammaticus, swallowed fiery coals in an apparent invulnerability to fire. Several rooks from the Lewis Chessmen are identified with these figures because they bite their shields.

ANSWER: **berserkers** [accept **berserksgangr** or **berserkergang**] (Michael Speidel discusses Berserker iconography in "Berserks: A History of Indo-European 'Mad Warriors.'")

[10e] Freydis was a shieldmaiden, like these female warriors who chose heroes to take to Valhalla. Odin placed one of these figures, Brunhilde, in a ring of fire.

ANSWER: **Valkyries** [or **Valkyrja** or **Valkyrjur**; or **Walküren**]

[10h] This deity names a cursed object that the shieldmaiden Hervor takes from her berserker father's barrow. This god is the only one among the Aesir not to laugh during an event that takes place on the island Lyngvi.

ANSWER: **Tyr** [accept **Tyrfing**] (Tyr does not laugh because he loses his hand during the binding of Fenrir.)
<Mythology>

9. Increased progesterone production during the luteal phase of the ovarian cycle leads to an increase in this quantity. For 10 points each:

[10h] Name this quantity. A fertility awareness method for natural birth control predicts fertility by combining observations of this physiological quantity with observations of cervical fluid.

ANSWER: **basal body temperature** [or **BBT** or **BTP**; prompt on partial answer; prompt on **T**; prompt on resting temperature or body temperature at rest or equivalents]

[10m] This process that results from surges in LH and FSH leads to slight increases in basal body temperature. This process may be accompanied by a type of pain called mittelschmerz.

ANSWER: **ovulation** [prompt on releasing eggs or releasing ova or equivalents; do not accept or prompt on "menstruation" or "period" or similar]

[10e] Small fluctuations in peripheral body temperature can bring on "hot flashes" caused by this process, which occurs as the ovaries stop producing estrogen and progesterone. During this event, menstruation permanently ends.

ANSWER: **menopause** [or **climacteric**]
<Biology>

10. Santiago Ramón y Cajal ("ka-HALL") made many pen-and-ink drawings of what he called "arborizations" within these larger objects, which are collected in the book *Beautiful* [this object]. For 10 points each:

[10h] Name these objects. The architect Christopher Wren provided engravings for a Thomas Willis book that first illustrated these objects.

ANSWER: **brains** [accept **nerve**s or **neuron**s or the central **nervous** system; accept specific portions of the brain like **cerebrum** or **cerebellum**; accept other body parts which contain neurons such as **retina** or **spinal cord** since Cajal drew them as well; accept *Beautiful Brain: The Drawings of Santiago Ramón y Cajal*; accept *The Anatomy of the Brain and Nerves* or *Cerebri anatome*]

[10e] This polymath performed many dissections in order to create medical illustrations like *Vitruvian Man*.

ANSWER: Leonardo **da Vinci** [or **Leonardo**]

[10m] Vesalius illustrated flayed corpses in dramatic poses in *De Humani Corporis Fabrica*, which disproved many assertions by this physician. This physician popularized Hippocrates's theory of the humors.

ANSWER: **Galen** [or Claudius **Galenus**]
<CE/Geo/Other/Pop Culture>

11. Along with Sayyid 'Ali Akbar, this figure petitioned Mirza Shirazi to support a national boycott of tobacco. For 10 points each:

[10h] Name this Shiite scholar who envisioned a united Islamic civilization to combat European imperialism in his “Refutation of the Materialists.” With Mirza Reza Kermani, this man planned the assassination of Shah Nasr al-Din.

ANSWER: Jamāl al-Dīn **al-Afghānī** [or Jamāl al-Dīn **al-Asadābādī**]

[10m] Some sources claim that al-Afghānī served as ambassador to this empire to gather support and money for Azam Khan. This empire had earlier signed the Treaty of Gulistan with Persia.

ANSWER: **Russian** Empire

[10e] Al-Afghānī was influenced to write “Refutation of the Materialists” after witnessing this 1857 conflict in India, named after the soldiers who refused to use Enfield rifles.

ANSWER: **Sepoy Mutiny** of 1857 [or **Indian Rebellion of 1857**; or **First Indian War of Independence**]

<World History>

12. In a play set twenty years after Jaroslav Hašek’s (“YAH-roh-slav HAH-shek’s”) novel, the soldier Josef Švejk (“YO-sef sh’VAKE”) gets lost in a snowstorm and meets this man, who performs a “wild dance” of “desperate thrusts.” For 10 points each:

[10m] Name this man who is allegorized as a Chicago mobster who aims to take over the Cauliflower Trust in a “parable play” titled *The Resistible Rise of Arturo Ui* (“OO-ee”).

ANSWER: Adolf **Hitler**

[10e] While in exile during Hitler’s regime, this German author of *The Resistible Rise of Arturo Ui* wrote pioneering epic theatre plays like *Mother Courage and Her Children*.

ANSWER: Bertolt **Brecht** [or Eugen Berthold Friedrich **Brecht**] (The play in the bonus lead-in is Brecht’s *Schweik in the Second World War*.)

[10h] This actress, Brecht’s second wife, starred in his play *Fear and Misery of the Third Reich*. She also co-founded the Berliner Ensemble with Brecht and premiered the role of Mother Courage.

ANSWER: Helene **Weigel** (“hay-LAY-nuh VYE-gul”)

<European Literature>

13. These materials are described by a Hubbard model near half-filling for which the on-site repulsion is much larger than the hopping integral. For 10 points each:

[10m] Name these materials that would be expected to be conductors in simple band theory, but are not, thanks to strong electron–electron repulsions. Nickel(II) (“nickel-two”) oxide is a textbook example of these materials.

ANSWER: **Mott insulators** [prompt on insulators]

[10h] The Mott–metal transition occurs when this quantity raised to the negative one-third power is equal to roughly four times the Bohr radius. The Hall coefficient equals one over the product of this quantity and the electron charge.

ANSWER: charge **carrier density** [accept **carrier concentration**; accept free **electron density** or free **hole density**; prompt on density or number density; prompt on n]

[10e] The Hubbard model also describes materials named for having “heavy” examples of these particles in their unfilled f orbitals. This broad class of particles all have half-integer spin, unlike bosons.

ANSWER: **fermions** [accept heavy **fermion** materials; anti-prompt (ask “can you be less specific?”) on electrons]

<Physics>

14. Answer the following about postmodern architects’ use of verbal and architectural quotations, for 10 points each.

[10h] Robert Venturi stated this four-word quip in the book *Complexity and Contradiction in Architecture*. This phrase plays off another architect’s maxim extolling minimalism.

ANSWER: “**less is a bore**” (The other maxim is “less is more.”)

[10m] Philip Johnson’s design for 550 Madison Avenue has an ornamented open pediment that has been compared to the work of Thomas Chippendale, an 18th-century English artisan who made this general class of objects.

ANSWER: **furniture** [or **cabinetry**; accept **chairs** or any other specific piece of furniture]

[10e] Michael Graves’s controversial design for the Portland Building incorporates many elements from this geometrical style of architecture popular in the 1920s, which was used in skyscrapers like the Chrysler Building.

ANSWER: **Art Deco**
<Other Arts (Visual)>

15. The Professional Quality of Life scale measures this phenomenon often found in trauma workers, oncology nurses, and palliative care specialists. For 10 points each:

[10h] Name this form of secondary traumatic stress that is increasingly affecting medical professionals as a result of the COVID-19 pandemic. This acute burnout only found in caregivers can result in apathy or loss of empathy.

ANSWER: **compassion fatigue**

[10m] Compassion fatigue is common in professions like healthcare that heavily demand this kind of work. Arlie Hochschild coined the name for this kind of work.

ANSWER: **emotional labor** [do not accept or prompt on “emotion work”]

[10e] Guy and Newman argue that this economic phenomenon emerges because most stereotypically female professions require emotional labor, but companies do not compensate for it like they do other forms of labor.

ANSWER: gender **wage gap** [or gender **pay gap**]

<Social Science>

16. Eugenio Montale called this author a poet “in C Major” and translated his poem “When You Are Old,” which was itself based on a poem by Pierre Ronsard. For 10 points each:

[10m] Name this author whose play *The Countess Cathleen* was dedicated to Maud Gonne and translated into Italian by Nicolò Vidacovich. This author drew on Japanese Noh theater in plays like *At the Hawk’s Well*.

ANSWER: W. B. **Yeats** (“yates”) [or William Butler **Yeats**]

[10e] Bishnu Dey, an author in this language, labeled Yeats as the “poet of the universe” and translated 18 of his poems. Yeats championed Rabindranath Tagore, a major poet of this language’s namesake “Renaissance.”

ANSWER: **Bengali** [or **Bangla**; accept **Bengali** Renaissance]

[10h] A modernist poet from this country translated Yeats’s poem “The Cloths of Heaven,” which says “tread softly because you tread on my dreams.” Another poet from this country wrote “tread softly, deeply, and go” in “Azaleas.”

ANSWER: **Korea** [accept North **Korea** or South **Korea**] (The poets are Kim Eok and Kim Sowol.)

<British Literature>

17. This Hebrew word is also called the Tetragrammaton. For 10 points each:

[10e] Identify this word used as a name for God in the text of the Torah. A Christian denomination known for door-to-door proselytizing is named for this word’s “witnesses.”

ANSWER: **Jehovah** [accept **Jehovah**’s Witnesses; or **Yahweh**; or **yud-hey-vav-hey**; or **YHWH**]

[10m] When reading the Torah, Jews say this word in Hebrew in place of YHWH. In the King James Bible, the English version of this word is written in all capital letters. *You may give the answer in English or Hebrew.*

ANSWER: **Adonai** [or **Lord**]

[10h] The Jahwist and Elohist sources, named for their contrasting words for God, are part of this four-source theory for the origin of the Hebrew Bible. This hypothesis was popularized by Julius Wellhausen in the late 1800s.

ANSWER: **documentary** hypothesis [or **DH**]

<Religion>

18. Several cultures built pyramids, but many more built *tumuli* (“TOOM-yoo-lye”), or earthen burial mounds. For 10 points each:

[10h] Name these Japanese keyhole-shaped *tumuli*, primarily located near Osaka. These *tumuli*, which contain many clay *haniwa* figurines, give the name to the early Yamato period.

ANSWER: **kofun** [or **kofungun**; accept **Kofun** period]

[10m] The *tumuli* at this site were first excavated shortly before World War II by the archaeologist Basil Brown. King Rædwald, or else his son Eorpwald, is generally thought to have been buried at this site's Mound 1.

ANSWER: **Sutton Hoo**

[10e] The ancient city of Cahokia, which contains the four-terraced Monk's Mound among its many *tumuli*, is located near East St. Louis along this river. This river also names the civilization to which Cahokia belonged.

ANSWER: **Mississippi** River [accept **Mississippian** Culture]

<Other History>

19. A “universal covering problem” named for this mathematician asks for the smallest convex shape that can cover a planar set of diameter one. For 10 points each:

[10h] Name this mathematician. An operation named for this mathematician is the subject of the monotone and dominated convergence theorems, and is often said to partition the range, instead of the domain.

ANSWER: Henri **Lebesgue** (“luh-BEG”) [or **Lebesgue** integral; or **Lebesgue** integration]

[10m] Lebesgue names one of these functions that corresponds to length, area, and volume in one, two, and three dimensions, respectively. These countably additive functions map sets to nonnegative real numbers.

ANSWER: **measure** [accept Lebesgue **measure**]

[10e] Besides countable additivity, the other axiom of a measure is that it must assign zero to this set. This set, which is typically notated using a circle with a slash through it, is a subset of any other set.

ANSWER: **empty** set [or **null** set]

<Other Science (Math)>

20. A book structured after this format uses the concept of “beings of reason” to address the perennial philosophical problem of how we can talk about non-existent entities like gryphons. For 10 points each:

[10h] Name this method that titles the magnum opus of Francisco Suárez. The *quodlibet* and the *obligationes* were popular varieties of this medieval scholastic style of debate.

ANSWER: **disputations** [or **disputationes**; accept *Metaphysical Disputations*, *Disputationes metaphysicae*, or *Disputaciones metafísicas*]

[10e] Francisco Suárez, Francisco de Vitoria, and other members of the School of Salamanca were influenced by this scholastic philosopher's treatment of topics like natural law in his *Summa Theologica*.

ANSWER: Thomas **Aquinas** [or Tommaso d' **Aquino**; prompt on **Thomas** or **Thomism**]

[10m] *Two-word English or Latin term required.* Suárez and Vitoria considered factors like proportionality and likelihood of success in studying this topic of when conflict is morally permissible, which St. Augustine introduced.

ANSWER: **just war** [or **jus bellum justum**; accept **jus ad bellum** or **jus in bello**; prompt on **war**]

<Philosophy>