

## 2021 ACF Fall

### Packet K by Editors

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Tossups

1. A Francisco Goya painting titled for one of these events shows a Spanish Lent tradition of a masked parade with a large banner showing the "King of the Carnival." A wide painting of one of these events includes the chalk-colored cliffs of Roche du Mont in its background. In another painting of one of these events, St. Peter holds out keys next to the figures of St. John, Mary, and Jesus in its celestial upper half. An artist used attendees of a real-life one of these events as models for a painting displayed with *The Stone Breakers*. For 10 points, name this kind of event depicted at *Ornans* by Gustave Courbet, and which El Greco depicted with Count Orgaz being lowered into the ground.

ANSWER: **burials** [accept *A Burial at Ornans* or *Un enterrement à Ornans*; accept *The Burial of Count Orgaz* or *The Burial of the Count of Orgaz* or *El Entierro del Conde de Orgaz*; accept *The Burial of the Sardine* or *El entierro de la sardina*; prompt on funerals]

<Painting/Sculpture>

2. This operation applied to Hamilton's principal function equals negative the Hamiltonian.  $i$  times  $\hbar$  times this operation applied to the wavefunction equals the total energy of the system. By Faraday's law, this operation applied to the magnetic field equals negative the curl of the electric field. For one-dimensional simple harmonic motion, position is proportional to this operation applied twice to position. This operation applied to a conserved quantity is zero. In calculus-based physics, this operation applied to angular momentum yields torque, and this operation applied to position yields velocity. For 10 points, name this mathematical operation that is often written as  $d$  over  $dt$ .

ANSWER: **time derivative** [or partial **time derivative** or partial **derivative with respect to time**; accept  **$d$  over  $dt$**  before mention; prompt on derivative or differentiation with "with respect to what quantity?"]

<Physics>

3. A visit to this city by Congressmen Peter Meijer and Seth Moulton was criticized for draining security and personnel. An event in this city following the failure of the Doha Agreement was photographed in an image showing 640 people in a plane's cargo bay. The United States formally apologized two weeks after a drone strike that killed 10 innocent people in the wake of a suicide bombing in this city. That suicide bombing was carried out by ISIL-KP during a mass evacuation at this city's airport ahead of an August 31st deadline to remove troops from this city. For 10 points, name this city recaptured by the Taliban in August 2021, the capital of Afghanistan.

ANSWER: **Kabul**

<Geography>

4. During this monarch's reign, the Assignation Bank was founded to issue paper money for this monarch's realm. This monarch founded the Free Economic Society and promoted a set of new legal doctrines in the *Nakaz*. The massive art collection of this monarch was housed in the Hermitage Museum. After annexing new territory through the Treaty of Kucuk Kaynarca ("ku-chook kai-NAR-jah"), this monarch's lover built fake villages to impress her. This monarch corresponded with thinkers like Diderot and Voltaire during her reign. This monarch expanded the institution of serfdom after the Pugachev rebellion against her. For 10 points, name this "enlightened despot" and longest-ruling empress of Russia.

ANSWER: **Catherine the Great** [accept **Catherine II**; prompt on Catherine]

<European History>

5. One poet who wrote in this language wrote that "Destiny" and "Men" play on a "Chequer-board of Nights and Days." A poet who wrote in this language included the love story of Layla and a mad poet as part of his collection of narrative poems called the *Five Treasures*. Another poet who wrote in this language commands readers to "Listen to the reed flute" in the opening lines of his collection *Spiritual Couplets*. A poet who wrote in this language noted that "the Moving Finger writes; and having writ, moves on" in a set of quatrains that also includes the wish for "a Jug of Wine, a Loaf of Bread – and Thou." For 10 points, Rumi wrote in what language that Omar Khayyam used to write the *Rubaiyat*?

ANSWER: **Persian** [or **Farsi**] (the poet in the second line is Nizami)

<World/Other Literature>

6. It's not silicon, but one class of structures composed of this element may be synthesized through HiPco ("HIP-coe"). Another structure formed by this element is a perfect semimetal in which electrons experience ballistic transport and behave like massless relativistic particles. This element forms structures that may be single- or double-walled and have extremely high tensile strength. Another structure formed by this element can be synthesized using adhesive tape. A crystal composed of this element has a hardness of 10 on the Mohs scale. For 10 points, name this element whose allotropes include nanotubes, graphene and diamond.

ANSWER: **carbon** [or **C**; accept **carbon** nanotubes]

<Chemistry>

7. A piece by this composer has a slow introduction interrupted by strings playing the following rapid melody: "high A low A high A, A C-sharp A." A vocalist speaks the phrase "Fellow citizens, we cannot escape history" in the final section of a piece by this composer that also uses quotes from the Gettysburg Address. This composer's third symphony reused a short piece for brass and percussion that he wrote in honor of ordinary citizens. Martha Graham choreographed a ballet by this composer of *Lincoln Portrait* that ends with variations on the Shaker hymn "Simple Gifts." For 10 points, name this American composer of *Fanfare for the Common Man* and *Appalachian Spring*.

ANSWER: Aaron **Copland**

<Classical Music>

8. This country was the primary beneficiary of the Tydings-McDuffie Act. American troops fought against the *juramentados* in this country during the Moro Rebellion. An American general famously declared "I will return" to this country during World War II. The phrase "You may fire when ready, Gridley" was said by George Dewey during a battle in this country. Emiliano Aguinaldo's forces were defeated by the United States in this country after it was ceded following the Spanish-American War. For 10 points, name this former American colony in Southeast Asia governed from Manila.

ANSWER: Republic of the **Philippines**

<US History>

9. A censored chapter from one of this author's novels centers around a confession to the monk Tikhon and relates how the protagonist took advantage of a young girl. After a character created by this author stops a group of bullies from throwing stones at a boy, the angry boy ferociously bites his savior's finger. The title of this author's novel *Demons* was translated by Constance Garnett as *The Possessed*. In one of this author's novels, the epileptic Smerdyakov confesses to the atheist Ivan that it was he, and not Dmitri, that murdered their father. For 10 points, name this author of *The Brothers Karamazov* who also wrote about the student Raskolnikov in *Crime and Punishment*.

ANSWER: Fyodor **Dostoevsky** [or Fyodor Mikhailovich **Dostoevsky**]

<European Literature>

10. A character played by this actor laughs maniacally for 30 seconds after watching his bathtub fall through the floor and shatter. While incapacitated, a character played by this actor repeatedly fires a handgun at an advancing tank. As Jimmy Dugan, the manager of the Rockford Peaches, this actor insisted that "there's no crying in baseball!" A character played by this actor realizes that a bloody handprint he left on a volleyball resembles a face. This actor tells the story of his life to strangers on a bench at a bus-stop in a film where he quips that "life is like a box of chocolates." For 10 points, name this actor who starred in *Saving Private Ryan*, *Castaway*, and *Forrest Gump*.

ANSWER: Tom **Hanks** [or Thomas Jeffrey **Hanks**]

<Pop Culture>

11. This man's grandfather failed to sacrifice his father after drawing an arrow with that father's name on it. This man *received* a speech about how God "created man from a clot" and "taught by the pen" from a figure who forced him to read despite him not knowing how in the cave of Hira. This man's first wife was a merchant who hired him to lead a caravan; and their daughter, known as the Radiant One, married this man's cousin and fourth successor. This man travelled to Jerusalem on the buraq in the Night Journey. In the *hijra*, this man and his followers fled to Medina from Mecca. For 10 points, name this prophet who received the Quran from Gabriel and founded Islam.

ANSWER: **Muhammad**

<Religion>

12. Qiskit ("KISS-kit") is a quantum computing library written in this language. It's not R, but one library used in this language uses functions like `groupby` and `sort_values` to manipulate `DataFrame` objects. A "notebook" platform named for supporting Julia, R, and this programming language is developed by Project Jupyter ("jupiter"). The data analysis library pandas is used in this language. Until 2020, both versions 2 and 3 of this language were actively maintained. Instead of curly braces, this language uses whitespace to separate blocks of code. For 10 points, name this programming language named for a British comedy show, not a snake.

ANSWER: **Python** [accept **Python 2** or **Python 3**]

<Other Science>

13. In one story by this author, a character is thought to have not forgotten "noblesse oblige" when she is seen with a construction foreman who "liked men." This author also wrote a story in which Sam Fathers dies shortly after Isaac McCaslin and Boon Hogganbeck kill a creature named Old Ben. One story by this author ends after the discovery of a strand of gray hair next to the corpse of Homer Barron. This author who included his story "The Bear" in the collection *Go Down*, *Moses* described the lives of Quentin and Benjy Compson in a novel set in the fictional Yoknapatawpha County. For 10 points, "A Rose for Emily" and *The Sound and the Fury* were written by what Mississippi-born author?

ANSWER: William **Faulkner** [or William Cuthbert **Faulkner**]

<US Literature>

14. Several of these people gather around a broken mirror on a New York street in a 1939 Helen Levitt photograph. A photograph of one of these people shows him with an overall strap hanging at his side as he claws his hand and makes a face. That photo shows one of these people holding a toy grenade in Central Park. Two of these people bury their heads on either side of Florence Owens Thompson in a Depression era photo. Two of these people in matching outfits captured in a Diane Arbus photo inspired a similar set of twins in *The Shining*. For 10 points, name this kind of person, two of whom appear with their parent in Dorothea Lange's photo *Migrant Mother*.

ANSWER: **children** [or **kids**; accept equivalents like **toddlers** or **youth** or **babies**; accept **boys** or **girls**; prompt on **brothers** or **sisters** or **siblings** or **twins**]

<Other Fine Arts>

15. American troops occupied this country after a revolt threatened the regime of its president Vilburn Guillaume Sam. That occupation of this country was opposed by guerrilla fighters known as the *cacos*. A ruler of this country named Faustin I declared himself emperor of this country and launched multiple failed invasions of its eastern neighbor. Jean-Jacques Dessalines declared himself the first emperor of this country after taking over a revolt against French colonial rule. For 10 points, name this Caribbean country occupying the western third of Hispaniola that gained its independence in a slave revolt led by Toussaint Louverture.

ANSWER: Republic of **Haiti**

<World History>

16. One philosopher described how this group tried to develop man "on a strictly hereditary basis into a god." The article "Like the Sound of the Sea Deep within a Shell" by Jacques Derrida concerns Paul de Man's association with this group. A philosopher associated with this group explained the friend-enemy distinction in *The Concept of the Political*, which asserted that emergency powers defined government. Prejudiced content found in the *Black Notebooks* led to debate surrounding Martin Heidegger's affiliation with this group. For 10 points, name this political party analyzed in Hannah Arendt's *The Origins of Totalitarianism* that was led by Adolf Hitler.

ANSWER: **Nazi** Party [accept equivalents like **National Socialists**; prompt on **German** government or **fascists** or **collaborationists**]

<Philosophy>

17. During one event in this play, a frightened character whose hair is standing up like "reeds" shouts, "Hell is empty and all the devils are here!" While playing chess, a woman in this play meets a group of people for the first time which makes her praise a "brave new world, that has such people in it!" This play's comedic subplot revolves around a conspiracy to overthrow the protagonist led by the drunken Stephano and Trinculo. Just before they are about to be murdered in this play, the sleeping Alonso and Gonzalo are awoken by the invisible spirit Ariel. For 10 points, the magician Prospero causes the title storm of what play written by William Shakespeare?

ANSWER: *The* **Tempest**

<British Literature>

18. Nennius described 12 of this person's victories against Saxon invaders, including the Battle of Mount Badon. This person dreamt of a dragon killing a bear before he defeated a giant at Mont St. Michel. This man ordered the killing of all babies born on May Day, but failed to eliminate the illegitimate son he conceived with his half-sister, Morgause. After he was gravely wounded by Mordred during the Battle of Camlann, this man was taken to Avalon by Morgan le Fay. For 10 points, name this leader of the Knights of the Round Table who pulled the sword Excalibur from a stone.

ANSWER: King **Arthur** [or **Arthur** Pendragon]

<Mythology>

19. In flow cytometry, propidium iodide is often used to bind to this substance. One technique that analyzes this compound uses ddNTPs to inhibit the function of a certain enzyme. Intercalating ("in-TUR-cuh-late-ing") agents like ethidium bromide bind to this substance. Southern blots may be used to analyze this substance. In one technique, the *Taq* ("tack") form of a certain enzyme is activated and deactivated by thermal cycling order to amplify this substance. In RFLP analysis, gel electrophoresis ("electro-four-EE-sis") is used to separate fragments of this molecule produced by restriction enzymes. For 10 points, PCR is used to amplify what double-stranded nucleic acid that encodes genetic material in humans?

ANSWER: **DNA** [or **deoxyribonucleic acid**]

<Biology>

20. One side in this war built a series of circular walls near Epipolae during one campaign. A lunar eclipse during that campaign in this war led to a delayed retreat that resulted in the massacre of one side's forces. The deaths of Cleon and Brasidas led to the Peace of Nicias during this war. The Thirty Tyrants were installed in control of one side after its defeat in this war. The navy of one side in this war was destroyed by Lysander at Aegospotami. Alcibiades defected from one side during the failed Sicilian Expedition in this war, a history of which was written by Thucydides. For 10 points, name this war between the Athenian-led Delian League and Sparta.

ANSWER: **Peloponnesian** War

<Other History>

## Bonuses

1. Prominent examples of these institutions included ones at Taxila and Nalanda. For 10 points each:

[E] Name these institutions that were home to intellectuals like the scholars Chanakya and Panini. Students would travel from across the Indian subcontinent to get an education at these institutions.

ANSWER: **universities** [prompt on **schools**]

[M] Another ancient university was the Taixue in China, established during the reign of this dynasty's emperor Ping. Liu Bang founded this dynasty that came to an end with the Yellow Turban rebellion.

ANSWER: **Han** dynasty

[H] A university at Gondishapur that was established by this Persian dynasty contained an advanced hospital that gave accreditation to local physicians. This dynasty was founded by Ardashir and included rulers like Shapur.

ANSWER: **Sassanian** dynasty [or **Sassanid** Empire; accept the **House of Sasan**]

<Other History>

2. A woman believes that this character should marry William Bankes after noting how this character's charm was her "Chinese eyes" and "puckered little face." For 10 points each:

[H] Name this character who is a guest at a summer home in the Hebrides alongside people like the poet Augustus Carmichael and Charles Tansley, the latter of whom tells her, "Women can't paint, women can't write..."

ANSWER: **Lily Briscoe** [accept either]

[M] Lily Briscoe stays with the Ramsay family and paints a portrait of Mrs. Ramsay in this 1927 modernist novel.

ANSWER: ***To the Lighthouse***

[E] *To the Lighthouse* is a novel by this author of *Mrs Dalloway*.

ANSWER: Virginia **Woolf** [or Adeline Virginia **Stephen**]

<British Literature>

3. In this religion, people who attain enlightenment are known as *jina*, or conquerors. For 10 points:

[E] Name this Indian religion whose practice of *ahimsa*, or non-violence, requires believers to become vegetarians. Monks in this religion are also required to eat during the day to ensure that no insects enter the food during cooking.

ANSWER: **Jainism**

[M] Jainism teaches four subtypes, including 'naming' and 'status-determining,' of this concept that binds *jiva*.

Buddhists use the metaphor of 'ripening' to describe the effects of this concept, whose 'conditioning' leads to habits.

ANSWER: **karma**

[H] The Digambara sect of Jainism is named for this practice. Their mandated form of this practice stems from the belief that no one with possessions can obtain *moksha*. A translation of Digambara is fine.

ANSWER: **nudity** [or **skyclad**; accept equivalents such as **naked**]

<Religion>

4. A quiver and bow sit at the base of a bust covered in flowers in the wooded right edge of this painting. For 10 points each:

[H] Name this *fête galante* painting that shows a procession of lovers descending a hillside toward a golden boat.

ANSWER: *The **Embarkation for Cythera*** [or *The **Embarkation to Cythera*** or *The **Voyage to Cythera*** or *The **Pilgrimage to Cythera*** or *L'**embarquement pour Cythère***; accept **from** in place of **to** in all of the aforementioned answers; accept reasonable equivalents mentioning a **journey** to/from **Cythera**]

[M] Jean-Antoine Watteau painted *Embarkation for Cythera* in this pastel, embellished style of art that dominated France in the 18th century.

ANSWER: **Rococo**

[E] The Rococo painter François Boucher painted depictions of the *Toilette* and the *Triumph* of this mythological figure. Sandro Botticelli showed this love goddess emerging nude from a seashell in a painting of her birth.

ANSWER: **Venus** [accept **Aphrodite**]

<Painting/Sculpture>

5. Sharpey's fibers connect the constituent bones of the cranium in this structure. For 10 points each:

[E] Name this bone structure that shapes the head and houses the brain and eyes.

ANSWER: human **skull**

[M] This bone is the largest and only movable bone in the skull. It sits below the maxilla and forms the jaw.

ANSWER: **mandible**

[H] The other bones in the skull cannot move because they are connected by these joints that contain Sharpey's fibers. In humans, these rigid joints are only found in the skull.

ANSWER: cranial **sutures**

<Biology>

6. For 10 points each, answer the following about North American cryptids:

[E] The Patterson-Gimlin film allegedly reveals the existence of this large ape-like creature said to inhabit the forests of the Pacific Northwest.

ANSWER: **Bigfoot** [or **Sasquatch**]

[M] This creature is named after the East Coast state whose forests it is said to inhabit. Supposedly the demonic 13th child of Mother Leeds, this creature is often depicted as a hooved biped with wings, horns, and a forked tail.

ANSWER: **Jersey Devil** [prompt on **Leeds Devil**]

[H] This winged humanoid creature with glowing red eyes was popularized in the 1970s by John Keel's book about its "prophecies." This creature sighted near Point Pleasant, West Virginia, reportedly appears before disasters, such as the collapse of the Silver Bridge.

ANSWER: **Mothman**

<Mythology>

7. The *Toxophilus* was a book written on the use of this weapon. For 10 points each:

[M] Name this weapon used by up to 80% of English troops against Charles d'Albret's forces at the Battle of Agincourt. This weapon was often made from yew wood.

ANSWER: **longbow** [prompt on **bow** and arrow]

[E] The longbow was used by English armies throughout much of this war from 1337 to 1453, during which the English tried to subjugate France. Joan of Arc helped lead French armies in this war after the Siege of Orléans.

ANSWER: **Hundred Years' War**

[H] The efficacy of the longbow was reduced by the use of this other weapon, which the French used in 1453 at Castillon. That same year, one of these weapons designed by Orban was used in a military campaign by Mehmed II.

ANSWER: **cannons** [accept **bombards**; prompt on **artillery** or **guns**]

<European History>

8. The speaker of this poem's section "The Spilled Blood" exclaims, "I will not see it! Tell the moon to come, for I do not want to see the blood" of the title person "on the sand." For 10 points each:

[H] Name this poem that ends with the speaker remembering "a sad breeze through the olive trees." This poem opens with a section where the speaker deplors "that fatal five in the afternoon."

ANSWER: "**Lament for the Death of a Bullfighter**" [or "**Lament for Ignacio Sanchez Mejias**"; or "**Llanto por Ignacio Sanchez Mejias**"]

[M] "Lament for the Death of a Bullfighter" was written by this Spanish author who also wrote the play *Yerma*.

ANSWER: Federico García **Lorca** [or Federico del Sagrado Corazón de Jesús García **Lorca**; prompt on **García**]

[E] A posthumously published poetry collection by García Lorca entitled *Poet in [this city]* was informed by his stay here in the late 1920's where he witnessed the Wall Street Crash of 1929.

ANSWER: **New York** City [accept *Poet in New York*; or *Poeta en Nueva York*]

<European Literature>

9. The gap between the results of these things and elections is exemplified by the Bradley effect, in which people are unwilling to admit to planning to vote against a nonwhite candidate. For 10 points each:

[E] Name these tools for measuring public opinion in which organizations like Gallup ask a series of questions to a randomly selected sample of people.

ANSWER: opinion **poll** [accept **scientific poll**; prompt on **surveys**]

[H] Discrepancies between a poll's sample and the general population are addressed through this technique, in which the results of polls are adjusted based on factors like age, race, and sex.

ANSWER: **weighting**

[M] These polls are taken outside polling places after interviewees vote and are used by media organizations to provide early estimations of election results. These polls are released after polls close to avoid influencing elections.

ANSWER: **exit** poll

<Social Science>

10. Answer the following about oil, for 10 points each:

[H] To create kerosene or gasoline from crude oil, the refinery breaks them down into shorter molecules through this process, which is catalyzed with zeolites.

ANSWER: fluid catalytic **cracking** [or **FCC**]

[E] The chemical energy inside gasoline is released through a reaction of this type, in which a hydrocarbon and oxygen react to form water and carbon dioxide. These reactions are highly exothermic and often produce flames.

ANSWER: **combustion** reactions

[M] When gasoline is burned, impurities containing this element combust to form this element's dioxide, a toxic gas and common air pollutant. This element's dioxide can be converted into a diprotic strong acid.

ANSWER: **sulfur** [accept **sulfur** dioxide; prompt on **S**]

<Chemistry>

11. Sofia Gubaidulina used Frederick the Great's theme for the *Musical Offering* to compose a work in this genre titled *Offertorium*. For 10 points each:

[H] Name this genre of composition. David Oistrakh premiered another work of this type that opens with a Nocturne movement, includes an extremely difficult cadenza, and heavily uses the D-S-C-H motif.

ANSWER: **violin concerto** [accept but do not otherwise reveal **Violin Concerto** No. 1 by Dmitri Shostakovich; prompt on **concerto** alone]

[E] This composer incorporated the musical cryptogram D-S-C-H into works like his Violin Concerto No. 1 and String Quartet No. 8. This Soviet composer included an "invasion theme" in his *Leningrad* Symphony.

ANSWER: Dmitri **Shostakovich**

[M] This other composer's violin concerto, also premiered by Oistrakh, begins with an *Allegro con fermezza* movement. This Armenian-born composer's ballet *Gayaneh* includes a raucous "Sabre Dance."

ANSWER: Aram **Khachaturian**

<Classical Music>

12. Charles Sanders Peirce argued that this concept was determined from a consensus reached through inquiry. For 10 points each:

[M] Name this concept which is "tracked" in a theory by Robert Nozick. Many Enlightenment philosophers argued that a justified belief that has this concept constitutes knowledge.

ANSWER: **truth**

[H] Nozick's tracking-theory of truth attempts to rule out these epistemic statements which attack the JTB definition of knowledge. In one of these statements, "Jones owns a ford, or Brown is in Barcelona."

ANSWER: **Gettier** problems [or **Gettier** cases]

[E] The JTB definition of knowledge was first suggested in this thinker's *Theaetetus* ("thee-uh-TEE-tuss"). This student of Socrates wrote *The Republic*.

ANSWER: **Plato** [or **Platon**]

<Philosophy>

13. This quantity's "modulus" is defined as the difference between an object's absolute and apparent magnitudes. For 10 points each:

[H] Name this quantity. This quantity's "comoving" variety corrects for the expansion of the universe, while its "proper" variety does not.

ANSWER: astronomical **distance** [accept **distance** modulus or comoving **distance** or proper **distance**]

[M] Another unit of astronomical distance, the parsec, is defined using this phenomenon, the apparent shift in the position of an object against a distant background when viewed from two different places.

ANSWER: stellar **parallax**

[E] Another unit of distance often used in astronomy is defined as the distance this phenomenon travels in a year. It takes this phenomenon approximately eight minutes to travel from the Sun to Earth.

ANSWER: **light** [accept **light**-year]

<Other Science>

14. These objects are central to the staging of George Bernard Shaw's play *Shakes versus Shav* in which a fictionalized version of Shaw gets into a fistfight with Shakespeare. For 10 points each:

[E] Name these objects. In a Carlo Collodi children's novel, which was originally quite gruesome, one of these objects named Pinnochio comes to life.

ANSWER: **puppets** [or **marionettes**]

[H] The Japanese form of puppet theatre called bunraku was practiced by Chikamatsu Monzaemon who wrote two plays titled for these events set at Sonezaki and Amijima.

ANSWER: love-**suicides** [accept **shinjū** ten; accept descriptive answers line double **suicide**]

[M] In this author's play *Bartholomew Fair*, the Puritan Zeal-of-the-Land Busy loses an argument with a puppet about crossdressing in plays. This author also wrote a play centering on the con-men Face and Subtle.

ANSWER: Ben **Jonson** [or Benjamin **Jonson**] (the other play is *The Alchemist*)

<World/Other Literature>

15. A member of this family founded *The New-England Courant* in 1721. For 10 points each:

[M] Name this family, another member of which wrote articles for the *New-England Courant* under the pseudonym "Silence Dogood" and would go on to begin publishing the *The Pennsylvania Gazette* in 1728.

ANSWER: **Franklin** family [accept James **Franklin** or Benjamin **Franklin**]

[H] One of Ben Franklin's rivals in Philadelphia was the publisher of the *American Weekly Mercury*, who had this surname. Another man with this surname authored the journal *Of Plymouth Plantation*.

ANSWER: **Bradford** [accept Andrew **Bradford** or William **Bradford**]

[E] John Peter Zenger was a prominent colonial newspaper publisher in this colony, where he was put on trial for libel after criticizing the governor. Ben Franklin's "Join or Die" cartoon was published before the 1754 Albany Congress in this colony.

ANSWER: **New York**

<US History>

16. Lake Nasser was formed as a result of the construction of a dam in this country. For 10 points each:

[E] Name this country where the Abu Simbel complex was moved to create the Aswan High Dam, the largest in Africa. The construction of the dam was funded in part by the nationalization of this country's Suez Canal.

ANSWER: Arab Republic of **Egypt**

[M] The Inga Dams are located on this river, whose proposed Grand Inga Dam would be the largest hydroelectric project in the world. The Malebo Pool is also located on this second-longest river in Africa.

ANSWER: **Congo** River

[H] The Akosombo Dam resulted in the creation of this largest artificial lake by surface area. This lake shares its name with a river with Blue, White, and Red branches.

ANSWER: Lake **Volta** [accept **Volta** River]

<Geography>

17. Kings from this dynasty carried out purges of a faction of scholars known as the Sarim. For 10 points each:

[H] Name this dynasty, an earlier king of which brought many scholars to his court in the Hall of Worthies. This dynasty fell into decline after its near-defeat in the Imjin War.

ANSWER: **Joseon** dynasty

[E] The Joseon ruled this peninsula from 1392 to 1910, when it was annexed to the Japanese Empire. After 1405, the Joseon ruled this peninsula from its modern-day city of Seoul.

ANSWER: **Korean** peninsula

[M] The Joseon king Sejong the Great commissioned the creation of one of these things for Korea in 1446. The Byzantine missionaries Cyril and Methodius developed one of these things used by the Slavs.

ANSWER: **writing systems** [accept **alphabets** or **scripts**]

<World History>

18. This architect's largest project included a building with upward and downward facing hemispheres straddling a central section with two rectangular towers. For 10 points each:

[H] Name this architect who also designed a round church with hyperboloid supports for that project, which he collaborated on with Lúcio Costa.

ANSWER: Oscar **Niemeyer**

[E] Niemeyer was an architect from this country, whose planned capital he helped design in 1961 as a replacement for Rio de Janeiro.

ANSWER: Federative Republic of **Brazil**

[M] Niemeyer collaborated with this architect to design the United Nations Headquarters in New York City. This creator of the Modulor system designed the planned city of Chandigarh in India.

ANSWER: **Le Corbusier** [or Charles-Édouard **Jeanneret**]

<Other Fine Arts>

19. In this story, a woman's corpse is found stuffed up a chimney with deep fingernail indentations on her face. For 10 points each:

[M] Name this story in which C. Auguste Dupin discerns that an escaped orangutan became agitated and murdered Madame L'Espanaye and her daughter.

ANSWER: "The **Murders in the Rue Morgue**"

[E] "The Murders in the Rue Morgue" was written by this gothic short story writer who also wrote "The Cask of Amontillado" and "The Tell-Tale Heart."

ANSWER: Edgar Allen **Poe**

[H] Edgar Allen Poe also wrote this short story in which an abused dwarf tricks a king and his group of ministers into putting on extremely combustible orangutan costumes before hoisting them up into the air on a chain and lighting them on fire.

ANSWER: "**Hop-Frog**" [or "**Hop-Frog**: Or, the Eight Chained Ourang-Outangs"]

<US Literature>

20. The holonomic variety of these things can be expressed by setting a function of position and time equal to zero. For 10 points each:

[H] Name these things, relations between state variables that limit the behavior of a physical system. For example, one of these things for a ball on a slope may be that the ball must remain in contact with the slope.

ANSWER: holonomic **constraints**

[M] For the ball to remain in contact with the slope, the sum of the component of gravity perpendicular to the slope and this force must be zero. Kinetic friction is directly proportional to this force.

ANSWER: **normal** force

[E] If the net force on the ball in the direction perpendicular to the slope is zero, then its acceleration in that direction is zero by this physical law. This physical law states that  $F_{net} = ma$  and is named for an English physicist.

ANSWER: **Newton's second** law of motion

<Physics>