

2021 ACF Fall

Packet E by Cornell A, McGill A

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Tossups

1. Experimental confirmation of a double beta decay that does not produce these particles would suggest the existence of Majorana fermions. A phenomenon associated with these particles is the subject of the Mikheyev-Smirnov-Wolfenstein effect. In order for beta decay to conserve lepton number, these particles were proposed to exist by Wolfgang Pauli. The oscillation of these particles allow them to change between their electron, muon, and tau varieties. For 10 points, name these fundamental particles that only interact via the weak nuclear force and gravity and have very small mass and no charge.

ANSWER: **neutrinos**

<Physics>

2. A chief of these people launched the Bambatha Rebellion in response to an increase in poll taxes. A leader of these people defeated a rival king at the Battle of Gqokli ("ko-klee") Hill. The rising influence of these people initiated a period of widespread conflict known as the "crushing," or the Mfecane ("meh-feh-CA-nay"). Thousands of these people were killed at the Battle of Blood River by a group that helped install Mpande ("ma-PAAN-day") as ruler of these people. This group was led by Cetshwayo during a war with the British Empire that saw this group win the Battle of Isandlwana ("is-AHN-dal-WAH-na"). The "buffalo horns" formation was used by, for 10 points, what South African ethnic group led by Shaka?

ANSWER: **Zulu** [or ama**Zulu**]

<World History>

3. The knight Yvain ("ih-WANE") rescues one of these creatures from a dragon. The demon Hiranyakashipu ("hee-RAHN-yah-kah-SHEE-poo") was killed by an avatar of Vishnu with the head of one of these creatures. After they had sex in one of Zeus' temples, Melanion and Atalanta were turned into these creatures. A killing spree by a goddess with the head of this creature was stopped only after that goddess mistook red beer for blood and passed out drunk. That goddess is Sekhmet ("SEK-met"). One of these animals that ravaged Greece had an impenetrable hide, so a hero killed it by strangulation. For 10 points, name these animals, one of which Heracles killed for his First Labor in Nemea.

ANSWER: **lions** [or **lioness**; accept Nemean **Lion**; prompt on **cat**]

<Mythology>

4. The protagonist of this novel refuses to "tie his soul to any particular voice" and instead hears a "song of a thousand voices" that coalesces into a single word. In this novel, the protagonist dreams of a dead songbird and contemplates suicide while clinging to a coconut tree. This novel's title character's lover dies of a snakebite and a ferryman tells him to "listen to the river." In this novel, Govinda joins a religious order while the protagonist goes on a journey of spiritual illumination. For 10 points, name this Herman Hesse novel about the enlightenment of the title character who shares his name with the Buddha.

ANSWER: **Siddhartha**

<European Literature>

5. A Japanese art form that uses these objects is known as Ikebana or Kado. It's not balloons, but a Jeff Koons sculpture outside the Guggenheim Bilbao is made from these objects. An oil work by John Singer Sargent depicting two young girls holding lanterns is named after three of these objects. One of these things floats next to a ram's head in a painting set in New Mexico. To impress Paul Gauguin, Vincent van Gogh painted a series showing yellow examples of these objects on a table in their Arles house. Close-ups of these objects that resemble genitalia appear in Georgia O'Keeffe paintings like *Black Iris*. For 10 points, name these objects that can be arranged in bouquets.

ANSWER: **flowers** [accept specific types like **sunflowers**; accept **blossoms** or *Almond Blossom*; accept **Carnation**, **Lily**, **Lily**, **Rose**]

<Other Fine Arts>

6. A Richard Fallon book about this entity defines its legitimacy as sociological, moral, and legal. The "standard of good behavior" and protection against "the ill humors of society" are potential benefits of this entity according to Federalist 78. This entity can issue writs of certiorari, which often respond to ambiguity and uncertainty. This entity's actions can be classified as restrained or activist based on whether they conform to *stare decisis*. The confirmation process for this entity's lifetime appointments is influenced by the American Bar Association and occurs in the Senate. For 10 points, name this U.S. governmental entity currently led by Chief Justice John Roberts.

ANSWER: **Supreme Court** of the United States [accept **SCOTUS**; accept equivalents like **federal judiciary**]

<Social Science>

7. R/K selection theory was first put forth based on the biogeography of these ecosystems. A work presenting a theory of the biogeography of these systems was written by Robert MacArthur and E. O. Wilson. Foster's rule states that organisms in these ecosystems tend to be either extremely small or extremely large. The northernmost species of penguin is native to one of these ecosystems, which is also home to a group of giant tortoise species. Charles Darwin studied a group of eighteen finch species in one of these ecosystems. For 10 points, name these ecosystems, examples of which include the Florida Keys and the Galapagos.

ANSWER: **islands** [accept **island** chains or **archipelagos**]

<Biology>

8. In the fourth movement of this symphony, the brass plays the melody "B-flat, B-flat, C, D" taken from its composer's unfinished "March of the Guards." The third movement of this symphony, which ends with the sound of thunder portrayed by four timpani, features a cor anglais and oboe duet evoking a *ranz des vaches* ("rawn day vash") between two shepherds. The fifth and final movement of this symphony repeatedly quotes the Dies Irae and depicts a witches' sabbath. The composer of this symphony's love for Harriet Smithson inspired its recurring motif, the *idée fixe*. For 10 points, name this symphony by Hector Berlioz.

ANSWER: *Symphonie **fantastique*** [or **Fantastical Symphony**]

<Classical Music>

9. A political treatise written for a ruler of this empire mentions girls with poisonous body fluids employed as assassins and according to Max Weber, "made Machiavelli's *The Prince* look harmless by comparison." That ruler of this empire accidentally poisoned his pregnant wife by sharing food with her, resulting in his son Bindusara being born with a blue dot on his forehead. A different ruler of this empire erected pillars inscribed with his edicts, one of which was located at Sarnath, where he also built his Lion Capital. That ruler of this empire converted to Buddhism after the bloodshed of the Kalinga War. For 10 points, name this ancient Indian empire ruled by Ashoka the Great.

ANSWER: **Mauryan** Empire

<Other History>

10. This author wrote "You shoot a fellow down / You'd treat if met where any bar is" in the poem "The Man He Killed." A poem by this author that mentions the "Immanent Will that stirs and urges everything" describes the loss of the Titanic. A character created by this author works as a dairy maid at the dairy of Talbothays. In addition to writing "The Convergence of the Twain," this author created a character who names her illegitimate child Sorrow and is arrested at Stonehenge. That character created by this author is assaulted by Alec and later marries Angel Clare. For 10 points, name this author of *Tess of the d'Urbervilles*.

ANSWER: Thomas **Hardy**

<British Literature>

11. A "second" version of this holiday is traditionally reserved for people who either came into contact with corpses or those on "distant journeys." Celebrants of this holiday wash their hands twice as part of the ceremonies of *urchatz* and *rachtzah*. A vegetable known as *karpas*, typically parsley, is dipped in a bowl of salt water during this holiday. Four questions called *Mah Nistannah* asked during this event include "why is this night different from all other nights?" Due to a prohibition on *chametz* during this holiday, unleavened bread called *matzah* is consumed at the *seder* feast. For 10 points, name this Jewish holiday that celebrates the exodus of the Israelites from Egypt.

ANSWER: **Passover** [or **Pesach**; prompt on *seder* before mentioned by asking "what holiday is it a part of?"]

<Religion>

12. In February 2020, TruTV premiered a trivia game show themed around this activity that takes place in "the Peppercorn." Products such as "Da' Bomb Beyond Insanity" and "Mad Dog 357" are mainstays in another show about this activity. A "Hall of Shame" for celebrities who failed to complete this activity includes Shaquille O'Neal, who broke his promise not to "make a face" while doing this activity. Participants in this activity are encouraged to engage in "The Last Dab," in which they apply an extra drop of a sauce whose Scoville rating is over 2 million. For 10 points, describe this activity central to Sean Evans' YouTube interview series *Hot Ones*.

ANSWER: **eating hot wings** [accept descriptions of "**eating** 10 spicy chicken **wings** while doing an interview"]

<Pop Culture>

13. A play by this author begins with a man sitting up in the middle of the night, distressed by his son's expensive horse racing habits. In another play by this author, two other playwrights mock each other by repeating the lines "approachest not thou to the rescue?" and "lost his bottle of oil" while competing for the title of Best Tragic Poet. This author wrote a play in which Strepsiades learns how to escape his debts by enrolling in the Thinkery under Socrates. This author wrote a play in which a chorus of the title animals proclaims "Brekekekex-koax-koax." For 10 points, name this Greek comic playwright of *The Clouds* and *The Frogs*.

ANSWER: **Aristophanes**

<World/Other Literature>

14. They aren't squares, but the only "magic" types of these shapes are the trivial first order one and a unique third order arrangement. Pascal's theorem in projective geometry states that when this shape is inscribed in any conic section, the intersection of the extension of opposite sides are collinear. This is the shape with the most edges that can be made from taking cross-sections of a cube. Besides squares and equilateral triangles, this is the only shape whose regular form can tile the plane. The sum of the interior angles of this shape is 720 degrees, and when regular, each of its interior angles is 120 degrees. For 10 points, name these polygons that have six sides.

ANSWER: **hexagons**

<Other Science>

15. This conflict was initiated by the shelling of a guard post at Mainila in a false flag operation. One side in this conflict isolated enemy troops into small pockets known as *motti*, such as during the Battle of Raate Road. The two sides in this conflict later clashed in the Continuation War. A sniper for one side in this war, Simo Hayha, earned the nickname "White Death" for his over 500 confirmed kills during this war. This war saw one side approach the Mannerheim Line on the Isthmus of Karelia. For 10 points, name this conflict between the Soviet Union and Finland that took place at the beginning of World War II.

ANSWER: **Winter** War

<European History>

16. This man developed a tactic of long and empty political speech which he called "bloviation." The memoir *The President's Daughter* was written by this president's mistress Nan Britton. The Washington Naval Conference took place under this president, who appointed the corrupt Charles R. Forbes as Director of the Veterans' Bureau. Much of this president's cabinet consisted of members of the Ohio Gang like Harry Daugherty and Albert Fall, who was the subject of a scandal after taking bribes from oil companies. The Teapot Dome scandal took place during the presidency of, for 10 points, what predecessor of Calvin Coolidge?

ANSWER: Warren Gamaliel **Harding**

<American History>

17. A set of paintings by this artist has subtitles including Southampton Water and Valparaiso Bay. This painter, who wrote *The Gentle Art of Making Enemies*, often signed his paintings with a butterfly monogram. A painting by this artist was derided as "flinging a pot of paint in the public's face," leading to his libel trial with art critic John Ruskin. Joanna Hifferman holds a lily and stands on a wolf skin rug in this artist's *Symphony in White, No. 1*, while other musically-titled paintings by him include his *Nocturne in Black and Gold*. The Peacock Room was decorated by, for 10 points, what painter who depicted his seated mother in *Arrangement in Grey and Black?*

ANSWER: James Abbott McNeill **Whistler**

<Painting/Sculpture>

18. This person's first book, which takes its title from a supposed African proverb about raising children, was made into a picture book in 2017. This person's daughter co-wrote a book of biographies of women with sections on Early Inspirations, Education Pioneers, and Earth Defenders titled *The Book of Gutsy Women*. A 2017 memoir by this author of *It Takes a Village* begins with this person watching that year's presidential inauguration and examines the causes of failure of her campaign for president. For 10 points, name this author of *What Happened*, the 2016 Democratic presidential nominee who lost to Donald Trump.

ANSWER: Hillary Rodham **Clinton**

<Current Events>

19. An alkyl compound of this element will react with aryl amides to install this element ortho to the amide substituent. A common example of a sterically hindered and non-nucleophilic base is this element's diisopropylamide ("DIE-ice-o-pro-pill-ay-myde"). A compound containing aluminum, hydrogen, and this element is a common strong reducing agent. Salts of this element are commonly used to treat depression and bipolar disorder. This element's cation is reduced in cells contained in most portable chargers and phone and laptop batteries. This element is also the least dense and lightest metal. For 10 points, name this alkali metal with atomic number 3.

ANSWER: **lithium**

<Chemistry>

20. The speaker of one poem by this author describes "the peanut-crunching crowd" shoving in to see the speaker being unwrapped "hand and foot" in a "big strip tease." The speaker describes a "love of the rack and the screw" in a poem by this author about a man whose picture shows "a cleft in" his "chin instead of" his foot. The speaker of a poem by this author rises "out of the ash" with her "red hair" and claims to "eat men like air." A "Polish town / Scraped flat by the roller / Of wars, wars, wars" appears in a poem by this author about a "man in black with a Meinkampf look." "You do not do, you do not do" opens a poem by, for 10 points, what confessional poet of "Lady Lazarus" and "Daddy"?

ANSWER: Sylvia **Plath**

<US Literature>

Bonuses

1. This empire defeated Portugal at the Battles of Tunmen and Shancaowan ("SHAN-tSao-WAN") after Portugal invaded its tributary state of Malacca. For 10 points each,

[H] Name this empire which eventually allowed the Portuguese to establish a commercial settlement at Macau in exchange for an annual rent. This empire was visited by the Jesuit priest Matteo Ricci.

ANSWER: **Ming** dynasty [accept **Ming** China; prompt on China with "under what dynasty?"]

[M] This other country competed with the Portuguese for control of the Asian trade through its VOC corporation. This country attacked many Portuguese colonies during its fight for independence in the Eighty Years' War.

ANSWER: **Dutch Republic** [or the **Netherlands**]

[E] Under this country's policy of *sakoku*, Portuguese ships were banned from trading with this country in favor of Dutch ones. The Dutch set up a trading post in this country's modern-day city of Nagasaki.

ANSWER: **Japan**

<European History>

2. With William Strunk Jr., this long-time editor of the *New Yorker* wrote *The Elements of Style*, a style guide that encourages succinctness and using the active voice. For 10 points each:

[E] Name this American author who wrote about a spider who attempts to save Wilbur from being slaughtered in his novel *Charlotte's Web*.

ANSWER: E.B. **White** [or Elwyn Brooks **White**]

[M] Thousands of pages of notes this author compiled with Harper Lee were used to publish his true crime novel *In Cold Blood* in the *New Yorker*. In a novella by this author, the protagonist works in Sally Tomato's drug ring before fleeing to Brazil.

ANSWER: Truman **Capote** (the novella is *Breakfast at Tiffany's*)

[H] William Gaddis' time at the *New Yorker* inspired his last novel, whose title plays on a homonym for this concept. To illustrate this concept, Mel tells a story about an old couple being hit by a drunk teenager in a short story first published in the *New Yorker*.

ANSWER: **love** [accept Agapē *Agape*; accept "What We Talk About When We Talk About **Love**" (by Raymond Carver)]

<US Literature>

3. In this opera, Baron Ochs is surprised by a bunch of children claiming he is their father while attempting to seduce Mariandel. For 10 points each:

[H] Name this opera about the love triangle between Sophie, the Marschallin, and the cross-dressing Octavian.

ANSWER: *Der **Rosenkavalier*** [accept *The **Knight of the Rose*** or *The **Rose-Bearer***]

[E] In *Der Rosenkavalier*, Baron Ochs sings a piece of this type called "Ohne mich" ("oh-nuh mik"), in which he claims that every day without him is a misery. This type of dance music, exemplified by "The Blue Danube," is in triple meter.

ANSWER: **waltz**

[M] In this other Richard Strauss opera, the title character performs the "Dance of the Seven Veils" to get Herod to give her the head of John the Baptist.

ANSWER: **Salome**

<Other Fine Arts>

4. White silk scarves called khata originated in this region where they are placed on the necks of subordinates or in the hands of an elder for a variety of occasions. For 10 points each:

[M] Name this region where Bon was practiced before the introduction of Buddhism. Tenzin Gyatso was the first leader of this region's Gelug school to recognize Bon as a religion.

ANSWER: **Tibet**

[E] When offered a khata, it's common for these Tibetan spiritual leaders to return them by placing the khata on the giver's neck, thus blessing that person. As the foremost spiritual leader of Tibet, Tenzin Gyatso is the "Dalai" one of these people.

ANSWER: **lama** [accept Dalai **Lama**]

[H] Though typically white, khata may also be blue, as which they are often left at altars called ovoos in honor of this Mongolian sky god. The soot-accumulating shangrak found at the top of yurts is a common symbol for this god.

ANSWER: **Tengri** [accept **Tenger** Etseg or **Tanri** or **Tangara** or **Tura** or **Tigir** or **Teyri**]

<Religion>

5. The boundaries on a Pourbaix ("PUR-bay") diagram can be calculated using this equation. For 10 points each:

[M] Name this equation that can be used to derive the Goldman equation. When applying this equation at room temperature, its RT over zF term is generally assumed to equal 0.0592.

ANSWER: **Nernst** equation

[E] The z in the Nernst equation represents the number of electrons transferred in a half-cell and is measured with this unit. This unit is equivalent to 6.022 times 10 to the 23 particles.

ANSWER: **mole**

[H] Real cells do not always follow the Nernst equation; the discrepancy between a cell's theoretical and experimental reduction potential is given this name. The Tafel equation relates the reaction rate to this quantity.

ANSWER: **overpotential** [do not accept or prompt on "overvoltage"]

<Chemistry>

6. Answer the following about the *24 Caprices for Violin* by Niccolò Paganini, for 10 points each:

[M] The final caprice in A minor is in this musical form, in which an initial melody is modified over a series of repetitions. Edward Elgar created a piece in this form based around an *Enigma* theme.

ANSWER: theme and **variations**

[E] The thirteenth caprice is named for the "Laughter" of this evil figure, who Paganini allegedly made a deal with to gain his talents on violin. The Catholic Church banned the tritone after claiming it was this figure "in music."

ANSWER: The **Devil** [accept **Satan** or **Lucifer**]

[H] The sixth caprice is named for the fact that the performer is almost constantly performing one of these musical elements using tremolo. Giuseppe Tartini's most famous violin sonata is named for a "Devil's" one of these musical elements.

ANSWER: **trill**

<Classical Music>

7. In 2018, archaeologists discovered a board game invented by this civilization in Azerbaijan, for 10 points each:
[M] Name this ancient civilization that invented that board game Hounds and Jackals, also known as 58-Holes. This civilization also invented the board games of Mehen, and Senet, likely the oldest known board game in the world.

ANSWER: Ancient **Egypt**

[H] A complete Hounds and Jackal set was discovered by Howard Carter in the tomb of Amenemhat IV, who sent a trade expedition to this region. A more famous expedition sent by Hatshepsut to this region brought back frankincense and myrrh.

ANSWER: **Puntland** [or Land of **Punt** or **Pwnt** or **Pwenet**]

[E] A Senet set was also discovered by Howard Carter in the largely intact tomb of this Egyptian pharaoh from the 18th dynasty. This famous "boy pharaoh" was the son of Akhenaten.

ANSWER: **Tutankhamun** [or King **Tut**; or **Tutankhaten**]

<Other History>

8. In a counternarrative to this novel, an unnamed narrator writes his doctoral thesis on "the life of an obscure English poet." For 10 points each:

[M] Name this novel whose plot is paralleled by Tayeb Salih's *Season of Migration to the North*. The narrator of this novel describes imagining the blank spaces on a map while resting on the *Nellie*.

ANSWER: **Heart of Darkness**

[H] In *Season of Migration to the North*, Mustafa Sa'eed murders his wife after he vows to liberate this place "with his penis." In a poem titled for this place, the speaker claims that "upright man seeks his divinity by inflicting pain."

ANSWER: **Africa** [accept "A Far Cry from **Africa**" (by Derek Walcott)]

[E] The narrator of *Season of Migration to the North* cries "Help! Help!" while drowning in one of these features. In *Heart of Darkness*, Marlowe spends much of his time on a steamboat which travels up one of these natural features.

ANSWER: a **river** [accept Nile **river**; accept Congo **river**]

<World/Other Literature>

9. For 10 points each, answer some questions about characters in Greek mythology who were turned into birds:

[M] This man threw his nephew Perdix off of the Acropolis because he was jealous of Perdix's inventions, but Perdix was turned into a partridge while falling. This man later created a set of wearable wings.

ANSWER: **Daedalus**

[E] After the Pierides ("pay-ER-ih-deez") lost a music contest to this group of deities, they were turned into birds. This group of nine deities, which includes Clio, Calliope ("kuh-LYE-oh-pee"), and Thalia, are the goddesses of literary, scientific, and artistic inspiration.

ANSWER: **Muses**

[H] When this woman was raped and muted by Tereus, she wove tapestries to communicate with her sister Procne. After they tricked Tereus into eating his son, Procne and this woman were turned into a swallow and a nightingale.

ANSWER: **Philomela**

<Mythology>

10. Chemical potential, volume, and temperature are constants of the "grand canonical" type of these things, which are collections of microstates. For 10 points each:

[H] Name these statistical formalisms whose "microcanonical" type uses NVE variables.

ANSWER: statistical **ensemble** [or thermodynamic **ensemble**]

[E] Microstates are also used in the definition of this quantity, symbolized S , which is the amount of disorder in a system. By the second law of thermodynamics, this quantity does not decrease in an isolated system.

ANSWER: **entropy**

[M] Entropy is not generated in this thermodynamic cycle, named for a French physicist. This cycle is used in a theoretical heat engine with maximum possible efficiency.

ANSWER: **Carnot** cycle [or **Carnot** engine, or **Carnot** heat engine]

<Physics>

11. Answer some questions about African-American soldiers in the Civil War. For 10 points each:

[E] This African-American abolitionist pressured Abraham Lincoln to allow African-Americans to fight in the Union Army. This abolitionist described his escape from slavery in Maryland in a "Narrative" of his life.

ANSWER: Frederick **Douglass** [or Frederick Augustus Washington **Bailey**]

[M] Many African-American soldiers were massacred by Confederate troops in this state's Fort Pillow Massacre. The Battles of Shiloh and Chattanooga took place earlier in this state.

ANSWER: **Tennessee**

[H] This all-African-American infantry regiment is memorialized across from its state's state house. Led by Colonel Robert Gould Shaw, many in this regiment would lose their lives fighting at the battle of Fort Wagner.

ANSWER: **Massachusetts 54th** Infantry Regiment [prompt on partial answer]

<US History>

12. By determining the points on an Edgeworth box that are Pareto-optimal, a contract curve can be constructed from which this curve can be derived. For 10 points each:

[M] Name this curve that illustrates the combinations of the amount of two goods that can be produced given a limited amount of resources. It's usually concave downwards because of increasing opportunity costs.

ANSWER: **production possibility** frontier [or **production possibility** curve/boundary; or **PPF** or **PPC** or **PPB**; accept **production possibilities** frontier/curve/boundary; accept **transformation** curve]

[E] Along with improving technology, this activity can shift the macroeconomic PPF outwards. Economists often debate the extent to which protectionist policies such as tariffs should be used to control this activity.

ANSWER: international **trade** [accept word forms like **trading**]

[H] Economies ideally produce at the point on the PPF where this concept, defined as the desires of consumers being optimally fulfilled, is achieved. Points on the PPF definitionally have this concept's "productive" counterpart.

ANSWER: **allocative efficiency** [prompt on **efficiency**]

<Social Science>

13. Cells in the mesolimbic pathway release this compound. For 10 points each:

[H] Name this compound whose precursor is synthesized from *L*-tyrosine. Neuroleptic drugs function by blocking receptors for this compound.

ANSWER: **dopamine** [do not accept or prompt on "dopa" or "*L*-dopa" or "levodopa"]

[M] This disease may be caused by impairment of the mesolimbic pathway and is therefore often treated with neuroleptic drugs. This disease comes in "catatonic" and "paranoid" forms.

ANSWER: **schizophrenia**

[E] Neuroleptic drugs may also be used to treat this condition characterized by the presence of beta-amyloid plaques in the brain. This neurodegenerative disease is the most common form of dementia.

ANSWER: **Alzheimer's** disease

<Biology>

14. In this story, Achille Papin ("uh-sheel pap-on") falls in love with Philippa while teaching her the part of Zerlina from *Don Giovanni*, but she rejects his advances. For 10 points each:

[H] Name this story in which the title servant organizes a dinner with turtle soup after winning the lottery.

ANSWER: "**Babette's Feast**"

[M] "Babette's Feast" is a short story by this author who wrote about her family's farm in Kenya in *Out of Africa*.

ANSWER: Isak **Dinesen** [accept Karen **Blixen** or Karen Christenze **von Blixen-Finecke**]

[E] Dinesen was born in this country. Hans Christian Andersen, another author from this country, wrote fairy tales such as "The Snow Queen" and "The Little Mermaid."

ANSWER: **Denmark** [or **Danmark**]

<European Literature>

15. This phrase appears in an ornate frame in a 1964 painting titled *The Tune and Also the Words*. For 10 points each:

[M] Give either the original French or the English translation of this five-word phrase, which appears in contradiction to a certain object in *The Treachery of Images*.

ANSWER: **This is not a pipe** or **Ceci n'est pas une pipe**

[E] *The Treachery of Images* was painted by this Belgian surrealist painter.

ANSWER: Rene **Magritte**

[H] Magritte also painted a 1964 work featuring one of these objects and the caption "This is not a [one of these objects]." One of these things fills up the title location of *The Listening Room*.

ANSWER: **apple** [accept "This is not an **apple**" or *Ceci n'est pas une **pomme***]

<Painting/Sculpture>

16. A bridge spanning one of these features was named for the sound made by prisoners admiring the city for the last time. For 10 points each:

[M] Name these features, which include the "Grand," "Cannaregio," and "Giudecca." The Bridge of Sighs was built over one of these features.

ANSWER: **canals** [accept Grand **Canal**; accept Cannaregio **Canal**; accept Giudecca **Canal**; accept but DO NOT REVEAL answers indicating that the canals are in Venice]

[E] The Grand, Cannaregio, and Giudecca are some of the many canals found in this northern Italian city. This city, located on the Adriatic Sea, was once the center of a "most serene republic" ruled by doges.

ANSWER: **Venice** [or **Venezia**]

[H] Venice is located near the mouths of the Piave River and this other river, the longest in Italy. This river also flows through the cities of Piacenza and Turin.

ANSWER: **Po** River

<Geography>

17. One building in this city once featured a 130-foot arch that doubled as a very accurate sextant. For 10 points each:

[H] Name this city, which, along with Bukhara, was a major city in the Transoxiana region. Ulugh ("oo-lug") Beg commissioned many buildings, including a *madrassa* and an observatory, in this city.

ANSWER: **Samarkand**

[M] After capturing Samarkand and moving his capital there, this leader had the Gur-e-Amir mausoleum built in the city. This great conqueror defeated and captured the Ottoman Sultan Bayezid I at the Battle of Ankara.

ANSWER: **Timur** [or **Timur** the Lame; or **Tamerlane**; or **Timur** Gurkani]

[E] Samarkand had earlier been destroyed during this Mongol leader's invasion of the Khwarezmian Empire. This leader established the Yassa law code and was succeeded by his son Ogodei as leader of the Mongols.

ANSWER: **Genghis Khan** [or **Temujin** or **Chinggis Khan**]

<World History>

18. A long poem with this concept in its title opens with the speaker stating that "Man's reason is in such deep insolvency to sense" that we can easily be led down the "sad pathways of Hell." For 10 points each:

[H] Name this concept whose *Testament* titles a poem by Robert Bridges. The speaker of a different poem with this concept in its title describes a person who has a "mind at peace with all below" and a "heart whose love is innocent."

ANSWER: **beauty** [accept *The Testament of Beauty* or "She Walks in **Beauty**"]

[E] The aforementioned poem "She Walks in Beauty" was written by this British Romantic poet of *Don Juan*.

ANSWER: Lord **Byron** [or George Gordon **Byron**]

[M] The title character of this author's masque *Comus* claims that "beauty is nature's coin" and "must not be hoarded." Robert Bridges' book on the *Prosody* of this poet discusses a poem by this blind author that's intended to "justify the ways of God to men."

ANSWER: John **Milton** (the poem is *Paradise Lost*)

<British Literature>

19. Answer the following about sets, for 10 points each:

[E] Two sets that have a non-empty intersection can be graphically represented using one of these diagrams, which consist of two overlapping circles.

ANSWER: **Venn** diagram

[M] This property is one measure of the "size" of a set. This property of a finite set is the number of elements it contains, while this property for the natural numbers is aleph-nought.

ANSWER: **cardinality**

[H] A mapping f between two sets A and B has this property if for every element y in B , there exists an element x in A such that f of x equals y .

ANSWER: **surjective** [or **onto**; accept **surjection**; prompt on **bijection** with "bijective functions satisfy the property being described as well as other properties; can you tell us what the specific property being described is called?"; do not accept or prompt on "injective" or "injection"]

<Other Science>

20. Thomas Nagel argued that animals have this concept in the paper "What Is It Like to Be a Bat?" For 10 points each:

[M] Name this concept that philosophical zombies lack although they are otherwise identical to humans. A paper that formulated the "hard problem" of this concept asks why units of this concept called qualia exist.

ANSWER: **consciousness**

[E] David Chalmers theorized philosophical zombies to defend a naturalistic form of dualism, a position often associated with this philosopher. This philosopher wrote "Cogito ergo sum" in his *Discourse on Method*.

ANSWER: Rene **Descartes**

[H] This thought experiment by John Searle argues that digital computers can never attain consciousness. The "Other Minds" reply to this argument holds that it applies to humans just as well as artificial intelligence.

ANSWER: the **Chinese room**

<Philosophy>