

Penn Bowl 2018

Packet 12

Editors: Jaimie Carlson, Jordan Brownstein, Eric Mukherjee, JinAh Kim

Writers: Jaimie Carlson, Nitin Rao, Margaret Tebbe, Ayush Parikh, Antonio Jimenez, Paul Lee, Lorenza Colagrossi, Will DiGrande, Eric Mukherjee, Sam Claypoole, Jacob Dubner, JinAh Kim, Gabe Ajzenman, Lam Tran, Joe Jun, Alex Quinn

Tossups

1. **Thomas Mann's rhetorical question, "is not peace an element of civil corruption?" and an unnamed person's observation about the "unconscious boredom of peace" are cited in this book's chapter "The Flames of Louvain." John F. Kennedy was influenced by this book during the Cuban Missile Crisis and sent copies of it to every American military base in the world. This book opens with the funeral of Edward VII, observing that "on history's clock it was (*) sunset, and the sun of the old world was setting in a dying blaze of splendor never to be seen again." The sections "Plans," "Outbreak," and "Battle" make up most of this Pulitzer-winning book. For 10 points, name this historical work by Barbara W. Tuchman that detailed the events that occurred during the first month of World War I.**

ANSWER: *The Guns of August*

<AJ, European History>

2. **Liebert and Baron performed an experiment inspired by this one in which subjects could press a button to heat up a handle that another subject was holding. This experiment tried to simplify theories of "defensive identification" by Mowrer and Freud. Follow-up experiments to this one included a version with a cartoon cat to examine effects of media influence, as well as reprimands or rewards given to the main participants. After being told that (*) toys were reserved for other children, the subjects in this experiment were more likely to imitate same-gender models, who were adults yelling "Sock him" or "Pow" while using a mallet. For 10 points, name this experiment conducted by Sheila Ross, Dorothea Ross, and Albert Bandura to demonstrate social learning of violent actions, in which children watched adults beat up the titular toy.**

ANSWER: Bobo doll experiment

<JC, Social Science (Psychology)>

3. **In a work of literary criticism whose title repeats this poet's name seven times, Daniel Hoffman claims that this poet's best work declares "The Universe is a plot of God." The author of that pseudo-astronomical "prose poem" *Eureka* also wrote a poem where a crowd watches "vast formless things" with "Condor wings" putting on "a play of hopes and fears / while the orchestra breathes fitfully / the music of the spheres" and another in which the title character is compared to (*) "Psyche, from the regions which / are Holy Land!" This author wrote "the play is the tragedy, 'Man'" in "The Conqueror Worm" and "to the glory that was Greece / and the grandeur that was Rome" in "To Helen." Another of his narrators asks the title creature "Is there – is there balm in Gilead?" and is met with the answer "Nevermore." For 10 points, name this Gothic author of "The Raven."**

ANSWER: Edgar Allan Poe

<MT, American Literature>

4. **Bodies undergoing this phenomenon have tidal bulges that cause a restoring force, resulting in tidal deceleration. The fact that 2008 KV42 is undergoing this phenomenon suggests that it has been pushed inwards from the Hill cloud. Objects undergoing this phenomenon have an inclination between 90 and 180 degrees. This phenomenon is stable up to the full radius of the Hill sphere, unlike its (*) counterpart, which is only stable up to one-third of that radius. Two main flaws in the Ptolemaic model were geocentrism and that it didn't**

explain this phenomenon. The rotations of Venus and Uranus have this property. For 10 points, name this type of orbit which moves in the opposite direction of the body's primary, which takes its name from the Latin words for "backwards step."

ANSWER: **retrograde** orbit

<LC, Other Science (Astronomy)>

5. Several posts on the Internet argue that the cover for one of this group's albums makes it look like one member is being carried in a baby bjorn, or like his hair is a horseshoe mustache. A song by this group plays during the wedding ceremony of a *Parks and Recreation* character who declares, "I mean, seriously, I cannot emphasize how little we thought about this." A song by this group that was originally supposed to be about Eleanor Roosevelt describes (*) "Going to the candidates' debate" before concluding "Every way you look at this you lose." After two characters run away from a wedding near the end of a movie, a depressing song by this group begins to play, emphasizing the uncertainty of their situation; that movie is *The Graduate*. For 10 points, name this folk rock duo who sang "Hello Darkness, my old friend" in "The Sound of Silence."

ANSWER: **Simon & Garfunkel** [or Paul **Simon** AND Art **Garfunkel**; prompt on incomplete answer]

<NR, Trash (Music)>

6. A section of these structures contains the protein MATE1 ("mate-one"), which is inhibited by cobicistat ("co-BIKA-stat"). Another protein in these structures is mutated in Bartter's syndrome. Necrosis of one section of these structures produces "muddy brown casts," and another section of them is damaged in a condition caused by Dent's disease, Lowe syndrome, or ingesting expired tetracycline. Fanconi syndrome damages the (*) proximal sections of these structures, which lie next to a section lined by podocytes that regulate GFR. Juxtamedullary and cortical types of these structures are differentiated by the lengths of their Loops of Henle, which use a countercurrent multiplication mechanism to concentrate urine. For 10 points, name these functional units of the kidney.

ANSWER: **nephron** [accept more specific sections: renal **tubule**, **glomerulus**, **Bowman's** capsule, **proximal tubule** or **PT**, **proximal convoluted tubule** or **PCT**, **proximal straight tubule** or **PST**, ascending/descending **loop of Henle**, **distal tubule** or **DT**, **distal convoluted tubule** or **DCT**, **distal straight tubule** or **DST**, **collecting duct**; prompt on **kidney**]

<AP, Biology>

7. In a *New York Times* review, Geoff Dyer mocks one author's memoir about this activity for its extremely frequent use of the modifiers "pretty" and "sort of." That memoir's narrator, who describes an elderly Mick Jagger still singing, says that he goes to bed early. In a story named after this activity, the narrator describes feeling like both the first and last man on Earth and watches money wash out of a drainpipe. He takes up this activity after being caught at a (*) bakery robbery, and deliberately stops performing this activity in order to defy his Borstal; that character is the angry young man Smith. It's not love or Anne Frank, but Haruki Murakami wrote a memoir entitled "What I Talk About When I Talk About" this activity. For 10 points, Alan Sillitoe wrote about the "loneliness" of what "long-distance" activity?

ANSWER: **running**

<JC, World Literature>

8. One type of this process uses a diaphragm made of polysulfone and zirconium. Another type uses a PFSA membrane. A specialized application of this process has been used to obtain single crystals of low-dimensional conductors such as charge-transfer salts. The PEM ("P-E-M") type of the process significantly reduces operational costs as well as ohmic losses. Mass equals Q over F times the equivalent weight in one of Faraday's laws for this process. In manufacturing, this process can be used for ECM for (*) etching surfaces with a permanent mark or logo. This type of process is used to drive the formation from cryolite in the Hall-Héroult

(“ay-ROO”) process. Around four percent of the hydrogen gas produced worldwide is generated by this process for water. For 10 points, name this type of process which drives a non-spontaneous chemical reaction using an electric current.

ANSWER: electrolysis [prompt on electrochemical reaction]

<AP, Chemistry>

9. *Meritor Savings Bank v. Vinson* involved a sex discrimination amendment to this act that may have been added to split its support. The threat of a discharge petition by Emanuel Celler forced Rules Committee Chairman Howard Smith to allow this bill to reach the floor. Moreton Rolleston contested that this act placed him in a condition of involuntary servitude while arguing on his own behalf before the Supreme Court.

Richard (*) Russell made a statement concerning this bill saying “we will resist to the bitter end,” while Barry Goldwater voted against this bill, remarking “you can’t legislate morality.” Lester Maddox chased customers away with an ax rather than abide by provisions of this act, which was upheld unanimously in *Heart of Atlanta Motel v. US*. For 10 points, name this landmark legislation against racial discrimination signed by Lyndon Johnson.

ANSWER: The Civil Rights Act of 1964

<NR, American History>

10. In a story by this man, the protagonist watches the slow approach of two men in the snow as he worries about students who have no way to get their grain ration because of the blizzard. Despite offering a captive a choice between freedom and prison, the protagonist of that story receives a threat written among the “winding French rivers” on his blackboard. In a novel, this author wrote about a man who treats his dog badly, (*) Salamano, who goes for advice to a protagonist who invites Raymond’s girlfriend over so he can have sex with her and spit in her face. This author wrote about Daru disobeying Balducci’s orders in a short story from his collection *Exile and the Kingdom* and about a man’s trial for shooting an Arab in a novel that begins “Maman died today.” For 10 points, name this existentialist French author of “The Guest,” as well as the novella *The Stranger*.

ANSWER: Albert Camus

<MT, European Literature>

11. This man defended his most controversial action by explaining he sought “the freedom to achieve freedom.” The athlete Michael Hogan and 13 spectators were killed in retaliation for one of this leader’s operations. As commander-in-chief of the National Army, this soldier responded to an ultimatum from Winston Churchill with the bombardment of the Four Courts. This revolutionary founded a unit nicknamed “The Twelve Apostles” that assassinated members of the (*) Cairo Gang and provoked a massacre by the Black and Tans at Croke Park. With Arthur Griffith, he negotiated a treaty conceding six counties and an oath of allegiance in exchange for elevating his country to a dominion. For 10 points, name this independence leader assassinated for signing the Anglo-Irish Treaty.

ANSWER: Michael Collins

<NR, European History>

12. Paul Boghossian argued [emphasize] *against* this view by imagining a place where people are under the illusion that water runs from their faucets, while Tyler Burge defended the “social” form of this view with the example of Jane, who believes she has arthritis in her thigh. One paper that adopts this view uses the example of an ant tracing the image of Winston Churchill in the sand to argue that we cannot be (*) brains in a vat.

This view was adopted in a paper that imagines an almost-identical planet where water is composed of XYZ instead of H₂O; that paper, “The Meaning of Meaning,” argues that knowing the meaning of a term is more than just being in an appropriate psychological state. For 10 points, name this view whose “semantic” version is described by Hilary Putnam in his “Twin Earth” thought experiment, the opposite of internalism.

ANSWER: **externalism** [or semantic **externalism**; or content **externalism**; prompt on **realism** or **non-skepticism** or answers that suggest that things really exist]

<NR, Philosophy>

13. **This man defeated his brother at the Battle of Inō, but was persuaded by his mother to pardon that brother and his retainers. He later faked an illness to kill that brother in Kiyosu Castle on the information of one of those retainers, Shibata Katsuie, who would become one of this leader's right-hand men. This general spent ten years sieging Ishiyama Hongan-ji in order to subdue the Amida Buddha-worshipping (*) Ikkō-ikki.** In his most famous battle, this shrewd tactician revolutionized his country's warfare when he defeated the Takeda clan by organizing his arquebusiers ("AR-kwuh-buh-SEERS") in three ranks at Nagashino. This daimyo deposed Yoshiaki, the last Ashikaga shogun. For 10 points, name this first unifier of Japan who was succeeded by Toyotomi Hideyoshi and Tokugawa Ieyasu.

ANSWER: **Oda** Nobunaga

<NR, World History>

14. **Mazzola created a 3D CGI reconstruction of this painting in order to propose that people within it are standing in a certain shape, which, according to Fichtner, encodes a secret theorem. That shape, a six-pointed star, is drawn by a man who likely helped the artist with most of the architecture in this painting. A tondo above this painting reads *causarum cognitio*, and it is grouped with three others that depict the (*) arts, theology, and law. A self-portrait of the artist hidden in this work places him behind some men with globes. One of the central figures in this painting, which is placed across from *La Disputa*, extends his hand towards the viewer, while the other points up.** For 10 points, name this fresco in the Stanza della Segnatura that features many philosophers and intellectuals including Plato and Aristotle, a work by Raphael.

ANSWER: *The School of Athens*

<JC, Painting>

15. **A model describing this phenomenon uses a modified Langevin equation to fit the isotropic material being considered. That is the Jiles–Atherton model. The energy lost in this phenomenon is calculated with an equation that has namesake coefficients k , a , and b and is named for Steinmetz. This phenomenon can be implemented by applying positive feedback to one input of a comparator, creating a (*) Schmitt trigger.** A memristor displays a "pinched" form of this phenomenon, which, when plotted, can be used to find the saturation remanence ("REM-uh-nence") and coercivity. In this phenomenon, magnetization lags behind changes in the applied magnetic field, creating a namesake loop on a plot of magnetization versus field. For 10 points, name this phenomenon that provides the element of memory in a hard drive, in which a system's state depends on its history.

ANSWER: **hysteresis**

<AP, Physics>

16. **A member of this group says "one common light we see, one air we breathe; nor different is the food we eat" as part of a battle cry. This group, who founded Ephesus, fought against the Gorgons armored by giant snake skins and attacked the Atlantean city of Cerne. A god kept a group of sailors from having to battle this group by sending Boreas to divert the sailors from an island inhabited by them. A leader of this group was killed in an action instantly regretted by (*) Achilles during the Trojan War, and another had her girdle stolen by Heracles as one of his labors.** For 10 points, name this mythological group of female warriors who burned off their right breasts, famous members of which were Penthesilea and Hippolyta.

ANSWER: the **Amazons**

<MT, Mythology>

17. A machine known as the “Kazam” was used to construct these things after being used to make leg splints in World War II. The most expensive one of these objects ever sold is framed by spotted dragons and was designed by Eileen Gray. Plywood was molded to create one of these objects by Charles and Ray Eames. Gerrit Rietveld (“KHAIR-it REET-felt”) created one of these objects with angled (*) panels, which was later painted in primary colors to adopt the look of de Stijl (“duh style”). One of these things with a rounded sling and a criss-crossing frame is known as the “butterfly.” Lilly Reich collaborated on “the Barcelona” one of these objects with Mies van der Rohe (“meese van der roh”). A wine-glass-like base and fluted top define one of these objects whose futuristic look was popularized in *Star Trek*; that Saarinen-designed object is known as the “tulip.” For 10 points, name this piece of furniture used for sitting on.

ANSWER: **chairs**

<JC, Other Arts (Architecture)>

18. *Description acceptable.* This address states that wives should not let anyone their husbands dislike sit on their furniture. It states that Satan has lost all hope that he will be able to lead humanity astray in big things, so he tries to tempt them in small things. The declaration “you have rights over your women, and your women have rights over you,” appears in this address, which bans usury and blood-revenge. This address notes that “all mankind is from Adam and Eve” and that “an (*) Arab has no superiority over a non-Arab.” It was first given on the Uranah Valley of Mount Arafat on the 9th day of Hajj, and notes that no prophets will come after its speaker. For 10 points, name this address delivered during the 632 AD hajj that ended the career of the final prophet of Islam.

ANSWER: Muhammad’s **farewell sermon** [accept **Khutbatu I-Wada** or the **last sermon**; accept reasonable equivalents suggesting its Muhammad’s last sermon before he dies]

<JC, Religion>

19. A group of works by this composer is arranged into four groups of three pieces, each of which has a piece for one, two, and four soloists and alternates between major and minor keys. He’s not Telemann, but several of this composer’s concertos were transcribed for solo keyboard by J. S. Bach, and some were written to accompany poems, one of which describes how “nymphs and shepherds lightly dance / beneath the brilliant canopy of” (*) the title time. This composer wrote a piece with a *moto perpetuo* first movement that is a concerto despite having no soloists. This composer of *Concerto alla rustica* wrote a piece for mandolin that typically accompanies a more famous group of concertos. Twelve of this composer’s concertos were included in his collection *The Contest Between Harmony and Invention*. For 10 points, name this Venetian composer of *The Four Seasons*.

ANSWER: Antonio Lucio **Vivaldi**

<MT, Music>

20. In a novel, a character is described as looking at the results of this action like Ajax at his slaughtered sheep. In another novel, Frank Churchill is disapproved of as flighty by Mr. Knightley, because he rides to London solely to do this. In a short story, a girl who is told she has an “awfully kissable mouth” goes from saying things like “Hello, shell shock!” and talking about her car to (*) attracting boys by saying she will later do this action. After being criticized by her aunt for not looking neat, Maggie Tulliver does this and is embarrassed in *The Mill on the Floss*. In a story centered around this action, the protagonist does it at the Sevier Hotel due to her cousin’s urging and is embarrassed because she looks like a flapper. For 10 points, name this thing that happens unwillingly to Marjorie in the F. Scott Fitzgerald story “Bernice Bobs Her Hair.”

ANSWER: getting one’s **hair cut** [accept word forms]

<JK, British Literature>

Bonuses

1. The study of proteins' effect on chemical reactions can provide important information about biological systems.

For 10 points each:

[10] Name these catalytic proteins whose kinetics are described by the Michaelis–Menten equation. At low substrate concentrations, the reaction rate is first order with respect to substrate concentration.

ANSWER: **enzymes**

[10] A Scatchard analysis can reveal information about positive or negative forms of this phenomenon, in which the binding of a molecule to one subunit of an enzyme affects the binding constants of the other subunits.

ANSWER: **cooperativity** [accept word forms like **cooperative**; prompt on **allosteric** or **allosteric regulation**]

[10] When a protein displays cooperative binding, its velocity versus substrate curve takes on this shape, rather than the hyperbolic shape of an enzyme obeying Michaelis–Menten kinetics.

ANSWER: **sigmoidal** [or **logistic**]

<AP, Biology>

2. One work by this author claims that soldiers or a fleet are not the most beautiful sight, but whatever you love best.

For 10 points each:

[10] Name this inhabitant of Lesbos who wrote about her daughter Cleis and whose sexuality has been rather intensely disputed. She may have committed suicide by jumping off the Leucadian cliffs.

ANSWER: **Sappho**

[10] This work by Sappho implores a figure who “left [her] father’s golden house” and “yoked to [her] shining car” “wing-whirring sparrows” to “fight as my comrade” when a girlfriend is treating her cruelly.

ANSWER: “**Hymn to Aphrodite**” [or “**Ode to Aphrodite**”; or **Sappho fragment 1**]

[10] This poet translated Sappho’s works in *If not, winter* and analyzed her discussion of jealousy in Fragment 31 in *Eros the Bittersweet*.

ANSWER: Anne **Carson**

<JC, European Literature>

3. Name some things about the history of women in film, for 10 points each.

[10] This woman won an Academy Award for the screenplay of a film in which the French actress “Her” and the Japanese architect “Him” separate in the wake of World War II, *Hiroshima mon amour*.

ANSWER: Marguerite **Duras** [or Marguerite **Donnadieu**]

[10] Anita Loos wrote a novel of this name and adapted it into a 1928 screenplay. Its more famous 1953 remake features Marilyn Monroe as the gold-digger Lorelei Lee, who sings “Diamonds Are a Girl’s Best Friend.”

ANSWER: **Gentlemen Prefer Blondes**

[10] This is the last name of Sofia, who directed a film in which the middle-aged Bob meets the young Charlotte in Japan, *Lost in Translation*, and had a small role as the baptized baby in her father Francis Ford’s film *The Godfather*.

ANSWER: **Coppola** [accept Sofia **Coppola** or Francis Ford **Coppola**]

<JC, Other Arts (Film)>

4. After the Spanish Coup of July 1936, this man became the leader of the Spanish Army of Africa. For 10 points each:

[10] Name this man, who led the Nationalists to a victory in the Spanish Civil War and ruled over Spain until 1975.

ANSWER: Francisco **Franco** Bahamonde

[10] With his victory in the Spanish Civil War, Franco defeated this government, led by Manuel Azaña. It was proclaimed in 1931 after the deposition of Alfonso XIII.

ANSWER: **Second** Spanish **Republic** [prompt on the **Spanish Republic**]

[10] The formation of a coalition government with the far-right CEDA party during the Second Republic era led socialists and anarchists to organize a 1934 general strike in this province of Spain, during which miners marched and captured the capital.

ANSWER: **Asturias**

<AJ, European History>

5. In this author's work *The Dream*, the narrator's body falls asleep and her soul ascends to contemplate all existence, starting with a fountain and a flower. For 10 points each:

[10] Name this Mexican nun and writer who defended women's right to education in *Reply to Sister Philotea* and wrote "I, the worst of all women."

ANSWER: **Sor Juana Inés de la Cruz** [accept either underlined portion; accept Juana Inés de **Asbaje** y Ramírez de Santillana; prompt on partial answer]

[10] Sor Juana titled a work with the phrase "Love is More" [one of these things]. Another work titled after one of these things includes sections like "Mexican Mask" and "The Sons of La Malinche."

ANSWER: **labyrinth** [accept **Love is More a Labyrinth** or **The Labyrinth of Solitude**]

[10] *The Labyrinth of Solitude* is by this other Mexican writer of *Sunstone*, who wrote a biography of Sor Juana in *The Traps of Faith*.

ANSWER: Octavio **Paz**

<JC, World Literature>

6. Lesser-known allies with the United States in these clashes were Sweden and the Kingdom of Sicily. For 10 points each:

[10] Name this series of early 19th-century conflicts against pirates off a namesake coast. President Thomas Jefferson authorized naval involvement in these wars, the first American military crossing of the Atlantic.

ANSWER: **Barbary Wars**

[10] An American ship with this name commanded by Andrew Sterrett fired the opening shots of the First Barbary War in 1801. The original ship to bear this name was run aground and burned on Lake Champlain in 1777.

ANSWER: **USS Enterprise**

[10] The *Enterprise* defeated a ship named after this city in the first battle of the Barbary Wars. In 1803, Stephen Decatur set fire to the *USS Philadelphia* after it struck a reef and was captured in this city's harbor.

ANSWER: **Tripoli**

<WD, American History>

7. According to this book, a sense of maleness comes at a great cost for boys because it requires separating themselves from a parent and repressing tenderness at an early age. For 10 points each:

[10] Name this book by Nancy Chodorow that examines how mothers raise their children. It also explores how women come to view themselves as heterosexual and how masculine dominance might be changed.

ANSWER: *The **Reproduction of Mothering***

[10] The processes described in *The Reproduction of Mothering* contribute to the develop of these kind of norms. This concept is often contrasted with sex.

ANSWER: **gender**

[10]It's not toxic masculinity, but this type of masculinity theorized by R. W. Connell legitimizes the dominant position of men and the subordinate position of women in society.

ANSWER: **hegemonic** masculinity

<MT, Social Science (Sociology)>

8. Alice and Bob need to communicate over the web without Eve the eavesdropper finding out! For 10 points each:

[10] Alice and Bob will typically use this triply eponymous cryptosystem, whose security depends upon the difficulty of finding the two large prime factors of a modulus linking the private and public keys.

ANSWER: **RSA** encryption [accept **Rivest–Shamir–Adleman** encryption]

[10] Alice and Bob can use smaller keys than those in RSA if they use this cryptosystem, which depends on the difficulty of finding the discrete logarithm of an arbitrary position on one of the title entities with respect to a base point. This system names varieties of DSA and Diffie–Hellman schemes.

ANSWER: **elliptic-curve** cryptography [accept **Edwards-curve**]

[10] If quantum computers improve, Alice and Bob are in trouble. This quantum algorithm will be able to run in polynomial time to find an integer’s prime factors, rendering RSA and elliptic-curve cryptography useless.

ANSWER: **Shor’s** algorithm

<AP, Other Science (Computer Science)>

9. This organization operated the London Steelyard until it was shut down by Queen Elizabeth I. For 10 points each:

[10] Name this German trading confederation that dominated the Baltic until its monopoly on shipbuilding and the grain trade was broken by the Dutch.

ANSWER: the **Hanseatic** League [or the **Hansa**]

[10] The “Queen of the Hansa” was this Imperial Free City located in Schleswig-Holstein. It’s not Kiel, but it names a canal that links the Trave River with the Elbe River.

ANSWER: the Hanseatic City of **Lübeck**

[10] Lübeck’s power declined after its defeat in this 16th-century Danish civil war that brought about the Reformation in Denmark. It is named after Christian of Oldenburg, a supporter of Christian II.

ANSWER: the **Count’s Feud** [or the **Count’s War**]

<NR, European History>

10. A book with this name by Siri Hustvedt deals with the artist Harriet Burden who sells her work by hiring men to present it as their own. For 10 points each:

[10] This is also the title of a 1666 utopian work by Margaret Cavendish, in which the protagonist reaches the title “new world” via the North Pole and gets crowned Empress of some bird-men and fish-men.

ANSWER: *The **Blazing World***

[10] This author compared Margaret Cavendish’s lack of tutoring and disorganized intellect to a giant cucumber choking roses and carnations in a garden in her work *A Room of One’s Own*.

ANSWER: Virginia **Woolf**

[10] Right after a discussion of Cavendish, *A Room of One’s Own* praises this author of *Oroonoko* and *The Rover*, who wrote about girls trying to convince their guardian that their lovers are aliens in *The Emperor of the Moon*.

ANSWER: Aphra **Behn**

<JC, British Literature>

11. Every Passover, Jews leave open a door for the Prophet Elijah to enter while they’re eating. For 10 points each:

[10] Jews also leave a seat open for Elijah next to the *sandek* (“SAHN-duck”) at this religious ceremony.

ANSWER: **circumcision** [or *bris* or *brit milah*]

[10] This similarly-named disciple of Elijah was said to have inherited two-thirds of his master’s soul. He notably summoned bears to eat some boys who were making fun of his baldness.

ANSWER: **Elisha**

[10] Elijah ascended to heaven in a whirlwind, on a chariot of fire. The Merkabah (“mair-kah-BAH”) Kabbalah is based off a vision of a flaming chariot made out of four-faced creatures from this other Old Testament prophet.

ANSWER: **Ezekiel**

<SC, Religion>

12. This composer's early musical experience was limited to hearing the dissonant bells of his village's church and the folk songs his nurse sang. For 10 points each:

[10] Name this Russian nationalist composer, one of the first to achieve fame in his own country, who wrote about a character meeting a giant talking head in *Ruslan and Lyudmila*.

ANSWER: Mikhail **Glinka**

[10] This Glinka composition was inspired by a slow bridal song called "Izza gor" in addition to the titular dance theme. This orchestral work was the first to be based entirely on Russian folk songs.

ANSWER: ***Kamarinskaya***

[10] Glinka inspired this group of Russian composers led by Mily Balakirev ("buh-LAH-kee-riff"), whose goal was to create a distinctly Russian style of music.

ANSWER: The **Mighty Handful** [or the **Five**; or the **Russian Five**; or the **Mighty Five**; or the **Mighty Coterie**; or the ***Moguchaya kuchka***]

<MT, Music>

13. Winston Churchill said "Hide them in caves and cellars, but not one picture shall leave this island" about the attempts to save famous works of art from Nazi attacks during World War II. For 10 points each:

[10] Name this collection of Greek sculptures by Phidias, once a part of the Parthenon. They were hidden in a subway station during the war and are now part of the British Museum.

ANSWER: **Elgin Marbles**

[10] This other museum organized an evacuation of 3,600 of its most valuable pieces, including the Mona Lisa, just days before World War II began.

ANSWER: the **Louvre**

[10] Some works of art weren't so lucky. *En Canot*, a work by this Cubist, was confiscated by the Nazis to be displayed in the Degenerate Art Exhibition and has been missing since.

ANSWER: Jean **Metzinger**

<MT, Painting>

14. Answer some questions about flows through a pipe, for 10 points each.

[10] Name this equation that is used to find the change in pressure in an incompressible fluid undergoing laminar flow through a cylindrical pipe with a constant cross section. It is a simplification of the Darcy-Weisbach equation.

ANSWER: Hagen-**Poiseuille** ("pwah-ZUH-ee") equation [accept **Poiseuille** law or **Poiseuille** equation]

[10] Poiseuille's law states that the pressure change in a pipe is proportional to this power of the radius of the pipe. The electric field from a quadrupole goes as this power of the distance.

ANSWER: **negative fourth** [or **inverse fourth**; do NOT accept or prompt on "four" or "fourth"]

[10] Poiseuille's law contains this quantity, symbolized mu. This quantity is the resistance of a fluid to flow, and is high for "thick" fluids like honey.

ANSWER: dynamic **viscosity**

<AP, Physics>

15. Max Scheler compared Greek love and Christian love in a book titled for this concept. For 10 points each:

[10] Name this sense of hostility that the weak carry towards the strong.

ANSWER: **ressentiment** ("ruh-SAWN-tee-MAWN")

[10] Nietzsche explained *ressentiment* in this text, which compares guilt to a creditor-debtor relationship and rejects "slave morality." This text built on concepts sketched out in *Beyond Good and Evil*.

ANSWER: ***On the Genealogy of Morals*** [or ***On the Genealogy of Morality: A Polemic***]

[10] Nietzsche attributes slave morality's triumph through resentment to these people, who bridged their slave morality into Christianity. These people were enslaved after the destruction of their Second Temple in Jerusalem.

ANSWER: **Jews** [or the **Israelites**]

<NR, Philosophy>

16. This object was destroyed in retaliation for the killing of Toxæus and Plexippus, who insulted Atalanta. For 10 points each:

[10] Name this object whose burning led to the death of Meleager, who could only live as long as it remained intact.

ANSWER: piece of **wood** [or **brand**; or **log**; or equivalents]

[10] This mother of Meleager and wife of Oeneus originally overheard the Fates at Meleager's birth and rescued the brand from the fire, but burned it to avenge Meleager's killing of her brother and nephew.

ANSWER: **Althaea**

[10] Meleager killed his relatives during the hunt for the Calydonian type of this animal, which was sent out by Artemis to avenge a snub in worship.

ANSWER: Calydonian **boar**

<JC, Mythology>

17. The International Date Line was moved in 1995 so the entirety of this country would be on the same side. For 10 points each:

[10] Name this Pacific island nation led by President Taneti Mamau, the site of World War II's Battle of Tarawa.

ANSWER: Republic of **Kiribati** ("KEE-rih-boss")

[10] The name "Kiribati" is a modified pronunciation of this British explorer's name. This man lends his name to one of its island chains was the first European to describe Tarawa Atoll after a 1788 visit on his ship *Charlotte*.

ANSWER: Thomas **Gilbert**

[10] During its colonial period, Kiribati's Christmas Island was used by the United Kingdom to test these fusion weapons pioneered by Edward Teller shortly before it acceded to the Partial Test Ban Treaty.

ANSWER: **hydrogen bombs** [or **H-bombs**; prompt on nuclear weapon; do not accept "atomic bombs"]

<WD, World History>

18. In a poem about this structure, the speaker says that "Thy cables breathe the North Atlantic still." For 10 points each:

[10] Name this structure that is described as "across the harbor, silver-paced" in the "Proem" opening to one epic poem dedicated to it.

ANSWER: **Brooklyn Bridge**

[10] This poet of "Chaplinesque" wrote his epic poem "The Bridge" about Brooklyn Bridge, which he could see from his window.

ANSWER: **Hart Crane** [prompt on Crane]

[10] Exact word required. In his poem "Chaplinesque," Crane describes finding this type of animal famished "on the step" and "through all sound of gaiety and quest" hearing it "in the wilderness."

ANSWER: **kitten** [do not accept "cat"]

<MT, American Literature>

19. Answer the following about a certain ongoing national election, for 10 points each.

[10] Michel Temer ("mee-SHELL TAY-mair") is the incumbent but chose not to run for president of this country.

Dilma Rousseff ("JEEL-muh hoo-SEFF") won this South American country's election in 2014 but was later impeached.

ANSWER: Federative Republic of **Brazil**

[10] This candidate for Brazil's Social Liberal Party was stabbed at a rally in early September. American journalist Glenn Greenwald described this man as "the most misogynistic, hateful elected official in the democratic world."

ANSWER: Jair **Bolsonaro** ("ja-EER boh-soh-NAH-roo")

[10] Bolsonaro will face Fernando Haddad, a member of this party, in the final election. After former president Lula da Silva was barred from running his campaign from jail, Haddad was chosen as this party's candidate.

ANSWER: **Workers' Party** [also accept **Partido dos Trabalhadores** or **PT**]

<WD, Current Events>

20. Arnold Sommerfeld names an extension of this man's model which uses elliptical orbits; however, that model is no longer used. For 10 points each:

[10] Name this Danish physicist who proposed that electrons in an atom existed only in stationary states and in circular orbits around the nucleus.

ANSWER: Niels **Bohr**

[10] The Bohr model of the atom predicts this ultraviolet spectral series for hydrogen involving electronic transitions for which either the initial or final quantum number is 1.

ANSWER: **Lyman** series

[10] The Bohr model of the atom predicts that electrons have these allowed angular momenta. Express your answer in terms of h -bar and an integer n .

ANSWER: **n** times **h -bar** [accept in either order]

<AP, Chemistry>

