

Tossups

1. One of this author's poems compares life's randomness to the bouncing of a tennis ball, but argues that God controls it in the same way that fabric is made durable by weaving. This author of "In Praise of Peace" is thought to be depicted by an illustration showing him shooting an arrow at a floating globe representing the world. The prologue to one of this author's poems ends with a historical analysis of Nebuchadnezzar's dream of a statue and claims that its subject matter consists "somewhat of lust, somewhat of lore." This author's version of the story of Apollonius of Tyre inspired Shakespeare's play *Pericles*. He wrote a poem in eight books structured as a lover's conversation with Genius, as well as a poem attacking the Peasant Revolt of 1381. For 10 points, name this medieval English poet of *Vox Clamantis* and *Confessio Amantis*.

ANSWER: John Gower

2. Rosa Ponselle caused a sensation by singing the lead role of this opera in the Met's 1927 revival of it. One character in this opera confesses that she has been seeing a lover in the duet "Sola, furtivo, al tempo." In the final act of the opera, one character strikes a shield three times, inspiring the frenzied chorus "Guerra, guerra!" Its main character tells a man that his life is in her hands in the duet "In mia man alfin tu sei," and begins the second act by contemplating her sleeping children and being unable to murder them with a dagger. During a mistletoe ceremony dedicated to Irminsul, this opera's title character sings an aria praising the peace brought by that "chaste goddess." Its title character becomes furious upon learning that Adalgisa is seeing her former lover Pollione, sings the aria "Casta Diva," and ends the opera by immolating herself on a funeral pyre. For 10 points, name this bel canto opera about a Druid priestess by Vincenzo Bellini.

ANSWER: Norma

3. In recent experiments, this condition has been deliberately induced by administering benzodiazepenes in order to study contextual cuing in perceptual identification tasks. Studies of people with this condition have provided strong evidence that relatively long periods of time are necessary for the process of initial consolidation. A longitudinal study by Carole Peterson found that the "childhood" type of this condition roughly lasts until the age of ten. This disorder is the major symptom of Korsakoff's syndrome, and is caused by damage to the medial temporal lobe. Early research about this condition centered on H. M., a patient who developed it after his hippocampus was surgically removed. Its anterograde type prevents people from encoding new information. For 10 points, name this psychological disorder in which people are unable to retrieve or form memories.

ANSWER: amnesia [accept anterograde amnesia until mentioned]

4. A mutation in the SLC25A15 gene leads to a deficiency in a translocase enzyme integral to this pathway and is known as HHH syndrome. One reaction in this pathway involves the transamination of oxaloacetate into aspartate, while other steps in this pathway result in the production of 2 NADH molecules. ARG1 catalyzes the final step of this pathway by hydrolyzing cytoplasmic L-arginine. N-acetyl glutamate allosterically regulates the main enzyme of this pathway, carbamoyl phosphatase synthetase, which generates its nitrogenous product from the hydrolysis of three ATP to two ADP and one AMP. Also known as the ornithine cycle, for 10 points, give the name of this pathway that takes place primarily in the liver and produces its namesake waste product containing two amine groups bonded to a carbonyl group.

ANSWER: urea cycle [accept "ornithine cycle" before mention]

5. Frank Geyer, a member of this organization, discovered the bodies of the three murdered Pitezel children, and thereby helped capture H.H. Holmes. One member of this organization used the pseudonym “James McKenna”; that man, James McParland, captured Harry Orchard, who had assassinated the governor of Idaho, and successfully infiltrated the Molly Maguires. The founder of this organization gained fame after he foiled an assassination attempt on Abraham Lincoln, and this organization famously was hired by Henry Clay Frick to fight union workers during the Homestead Strike. For 10 points, name this most notable American private security agency of the 19th century.  
ANSWER: **Pinkerton** National Detective Agency [accept **Pinkertons**]

6. One parable in this religion speaks of a man who follows a narrow path separating a river of fire to the south and a river of water to the north. That story is known as the “Parable of the White Path” and was written by Shandao, who was an adherent to this faith. This religion also speaks of two paths by which an adherent may seek the stage of non-retrogression in a world afflicted with the Five Turbidities. The Sukhavativyuha (Sook-Hah-Va-Tiv-Yoo-Hah) is one of the principle scriptures of this school, and recounts how the bodhisattva Dharmakara took forty-eight vows that led to his rebirth as the “Infinite Light.” Henceforth, practitioners of this religion who receive salvation by faith often repeat that figure’s name in an effort to be reborn in this religion’s namesake haven. Popularized by the Chinese starting from the 5th century C.E., for 10 points name this school of Mahayana Buddhism whose members worship the Amitabha buddha.  
ANSWER: **Pure Land Buddhism** [accept Amita before mentioned; accept **A-mi-tuo-fo**, **Jingtu**, and **Sukhavati**; prompt on “Mahayana Buddhism” before mention]

7. Each simply connected, open subset of one of these is holomorphic to either the complex plane, projective complex plane, or unit open disc, and conversely, according to the uniformization theorem. The number of automorphisms on one of these is bounded by the Hurwitz theorem if its genus is at least one. Holomorphic functions between two of these spaces that are equal on a subset of the domain are generally equal everywhere according to these spaces’ namesake identity theorem. An alternative way to understand these is to introduce a branch cut into the complex plain, which can then be viewed as the joining of the sheets of one of these; moving between sheets of one of these is then equivalent to switching analytic continuations of a function. For 10 points, name these real, 2-dimensional manifolds that arise naturally when considering how to unambiguously define multi-valued functions.  
ANSWER: **Riemann surfaces**

8. One sacred text of this mythos is *The Krater* attributed to Zopyros, which is thought to have compared the title bowl to the source of souls. Other texts ascribed to this belief system include *The Net* and *The Robe*. Bone plates from Olbia featuring opposites like “life” and “death” may be the first evidence of a self-identifying community of this religion’s practitioners. The Derveni fragment purports to explain several features of one of the theogonies of this religion, including the shaper of the universe, Protogonos or Phanes. Like Pythagoreanism, this religion practiced vegetarianism due to belief in metempsychosis. This religion had a soteriology tied to the “loosening” powers of a deity, who was eaten as a child by the Titans, thus creating human souls. Associated with a belief in the salvific power of Dionysos, for 10 points, identify this mystery religion of ancient Greece named for a mythic poet.  
ANSWER: **Orphism** [or **Orphicism**; or **Orphic** Cult; or **Cult** of **Orpheus**; prompt on **Bacchic** cult or **Dionysiac** cult or similar answers before Dionysos is mentioned; do not accept “Pythagoreanism” or similar answers]

9. The final sections of this novel were inspired by its author's obsession with finding Symmes's Hole. The protagonist of this novel terrifies a group of superstitious men by disguising himself as the bloated corpse of Hartman Rogers, and is rescued after the sailboat *Ariel* is crushed during a storm. Its main character becomes trapped in a box before receiving a note tied to his dog Tiger warning him about a mutiny. During a famine, Richard Parker is murdered and eaten by this novel's main character and his friend Augustus, who are then picked up by the *Jane Guy*. At the end of this novel, its title character escapes from the murderous natives of Tsalal along with Dirk Peters before sailing past the Antarctic Circle and encountering a massive, shrouded white figure. For 10 points, name this book whose title character leaves Nantucket aboard the *Grampus*, the only novel by Edgar Allan Poe.

ANSWER: The *Narrative of Arthur Gordon Pym* of Nantucket [or The *Narrative of A. Gordon Pym* of Nantucket]

10. One ruler of this polity initiated Literati Purges that brought about the rise of the Sarim faction. In another incident in this polity, the execution of Bishop Berneux led to an outburst of violence against Catholic residents of this dynasty. One treaty forced on this dynasty led to the occupation of this dynasty's Port Hamilton. The founder of this dynasty was a general who was ordered to invade China, but instead led a coup. This dynasty was destabilized by succession crises called the Strifes of the Princes. During this dynasty's decline, its female ruler Queen Min was assassinated by foreign agents, and this dynasty was forced to sign the Treaty of Gangwha. This dynasty was destabilized by the Donghak Peasant Rebellion, which led to a successful Japanese invasion. For 10 points, name this final Korean dynasty.

ANSWER: Joseon Dynasty [or Choson Dynasty; or Yi Dynasty]

11. In a Far Eastern blot, the result of this procedure is transferred to a PVDF membrane. Advancements in this method include the automation of droplet delivery and stationary phases impregnated with UV indicator dyes. General use developing agents include ceric ammonium molybdate and p-anisaldehyde, while ninhydrin is often used for amino acids. The key value in this technique is the retardation factor R-sub-f, which is the ratio of the migration distance of the analyte over the migration distance of the solvent front. As with a similar method performed with paper, the solvent moves through the stationary phase by capillary action. For 10 points, name this analytical separation technique often carried out on a silica-covered plate.

ANSWER: thin-layer chromatography [or TLC; prompt on partial answer]

12. The first act of one of this composer's operas ends with brass and woodwind glissandi accompanying a woman's screams before she identifies herself to Father Barré in a man's voice. In that opera by this composer, an electric guitar accompanies the chemist Adam and Mannoury as they plot against Grandier. One of his choral works depicts the mocking of Christ in the movement "Et viri, qui tenebant illum," frequently quotes the BACH motif, and includes an a capella Stabat Mater for three mixed choirs. Besides composing the opera *The Devils of Loudun*, he wrote many pieces featuring dense tone clusters, including one which requires performers to bow between the bridge and the tailpiece and play the highest and lowest possible pitches. He first gained prominence with a piece scored for fifty-two strings dedicated to people who were killed by an atomic bomb. For 10 points, name this Polish composer of the *St. Luke's Passion* and *Threnody for the Victims of Hiroshima*.

ANSWER: Krzysztof Penderecki

13. This poet declared “we shall have early fruit this year” at the end of a poem in which an examination of a man’s body finds “nothing in the brain but the dead echo of the sky.” This author of “The Autopsy” wrote a poem whose fourth section describes the “whole world emptied with that very last cry” of the title figure, who “lies on the scorched cape”-- that poem was based on his experience fighting in the title offensive during World War II. One of his longest poems is divided into the sections “The Genesis,” “The Passion,” and “The Gloria,” and is named for an icon of the Virgin Mary found on Mt. Athos. He praised the light of his native country in poems such as “Drinking the Sun of Corinth.” For 10 points, name this modernist Greek poet of *Heroic and Elegiac Song for the Lost Second Lieutenant of the Albanian Campaign* and *To Axion Esti*.

ANSWER: Odysseus Elytis [or Odysseus Alepoudellis]

14. This thinker wrote that the title goal could be accomplished if philosophers became the educators of citizens in his essay “How Philosophy Can Become More Universal and Useful for the Benefit of the People.” One work by this thinker inquires whether there is “a certain progress in the inclinations of the human species?” and argues that Luther, Gustavus Adolphus, and Peter the Great are the three most significant reformers of modern times. A student of Johann Georg Hamann, this philosopher developed an early theory of interpretation in his *On Thomas Abbt’s Writings*. This author of *This Too a Philosophy of History for the Formation of Humanity* wrote in another work that the title faculty is something that humans shared with animals, and argued that minds are composed of “forces” in his *On the Cognition and Sensation of the Human Soul*. For 10 points, identify this philosopher who authored a *Treatise on the Origin of Language*, an anti-systematic 18th century thinker.

ANSWER: Johann Gottfried von Herder

15. The song “And After the Farewell”, which had been a Eurovision entry earlier that month, was played to signal the beginning of this event. The main actors of this event were junior officers disgruntled by the move to make conscript time count towards seniority. Admiral Americo Tomas fled the country during this event, which led to the accession of a seven-man military junta. The man who was the target of this event expressed his concern that power would “fall into the street”, and refused to surrender to anyone below the rank of General. He ended up surrendering to General Spínola. This event was organized by the Armed Forces Movement, or MFA, and is sometimes called the 25th of April Movement. For 10 points, name this military coup against Marcelo Caetano, named for the red flower its supporters wore, which led to the end of the Estado Novo in Portugal.

ANSWER: Carnation Revolution [or Revolução dos Cavos, accept 25 de Abril or the 25th of April before it is mentioned]

16. In one scene in this novel, its protagonist tells a woman he would choose her over devotion to his mother, causing her to write the word “liar” in the dirt with a stick. Its protagonist receives letters that all end “The Russians will never enter Constantinople” from the leper Manduca, with whom he debates the Crimean War. Its main character’s mother, Dona Gloria, promised God before his birth that he would become a priest, although he eventually procures a substitute and leaves his seminary. This novel’s title character lives with his family friend Jose Dias on the Rua de Matacavalos, and becomes convinced that his son Ezequiel resembles his deceased friend Escobar. First published in 1899, it is narrated by the unreliable Bento, whose jealousy convinces him of the adultery of his wife Capitu. For 10 points, name this novel by Joaquim Machado de Assis, whose title roughly translates as “Lord Taciturn.”

ANSWER: Dom Casmurro [or Lord Taciturn before mentioned]

17. This nation controls Mafia Island, which can be found just off the mouth of the Rufiji River. This nation's Usangu wetlands are irrigated by the Great Ruaha River. This nation has recently authorized uranium mining in its Selous National Park, which protects this nation's portion of the Miombo Woodlands. One city in this nation has a historic center named "Stone Town," which was once the capital of an independent sultanate. This nation has multiple salt lakes, such as Lake Natron, in its Gregory Rift, which is part of the Great Rift Valley. This home to the volcano Mount Meru is home to an enormous collapsed caldera, the Ngorongoro Crater, which is located near Serengeti National Park. For 10 points, name this East African nation home to Dar Es Salaam and Mount Kilimanjaro.

ANSWER: Tanzania

18. The surrender of Hegra Fortress marked the end of organized resistance to this action, defenses against which were further weakened by Operation Alphabet. Oscarsborg Fortress provided the first counter-action during this event when it sunk the Blucher. The Shetlands Bus program helped those who either wanted to escape this action or aid its opposition. This event was precipitated by the Cossack's liberation of prisoners aboard the Altamark, which had sailed into waters that were later the site of the Battles of Narvik during this event. This event inspired the formation of Milorg and similar groups, one of which attacked hydroelectric plant in order to disrupt heavy water production. This event, which was immediately preceded by a similar action against Denmark, caused the flight of Haakon VII and opened the door for Vidkun Quisling's coup. For 10 points, name this military campaign that began with the Kriegsmarine sailing up some fjords.

ANSWER: the Nazi invasion of Norway [or German Invasion of Norway; or Operation Weserübung]

19. The region of phase space defined by assigning one of these quantities a particular value is known as an invariant torus and its corresponding coordinates are known as action angles. The conjugate momenta resulting from the Hamilton-Jacobi equation are this type of quantity, which have a zero Poisson bracket with the system's Hamiltonian and with each other. Ones of these variables that do not depend on time explicitly are known as integrals. The energy is one of these in every Hamiltonian system; systems with the energy as their only one of these are known as non-integrable, while those with more than one are known as integrable. Each one corresponds to a symmetry of a Hamiltonian system's Lagrangian according to Noether's theorem. For 10 points, name these quantities that do not change along a system's trajectory.

ANSWER: constants of the motion [prompt on conserved quantities; prompt on constants; prompt on integrals; prompt on conjugate momenta; prompt on actions]

20. One of these creatures runs away from a man with a spear in an animated short by Polish filmmaker Witold Giersz. Antoine-Louis Barye created a sculpture of a Turkish one of these animals, while G. F. Watts' *Physical Energy* also prominently features one of them. Johann Gottfried Schadow added sculptures of four of these creatures to the top of a structure designed by Carl Gotthard Langhans. A naked boy stands next to one of these animals in a painting from Picasso's Rose Period. The muscles and bones of these creatures were meticulously recorded by George Stubbs. Many of these creatures reverse direction across the Boulevard de l'Hopital in a Rosa Bonheur painting. One of these creatures stands on the enormous Thunder Stone in a Etienne Maurice Falconet statue in Saint Petersburg. For 10 points, name these creatures, prominently featured in equestrian monuments.

ANSWER: horses

## Bonuses

1. In one of his works, Division is depicted as a woman in a half-black, half-white dress sawing her own leg off and sitting next to a depiction of Anger as a small black centaur-like creature. For 10 points each:

[10] Identify this Sienese artist of *The Allegory of Good and Bad Government*.

ANSWER: Ambrogio **Lorenzetti** [or Ambruogio **Laurati**]

[10] In *The Allegory of Bad Government*, this figure is shown bound at the foot of Tyranny's throne and with her scales broken. This figure is more commonly depicted blindfolded.

ANSWER: **Justice**

[10] This other Sienese artist also painted frescoes for the Palazzo Pubblico, including his *Maesta* in the Sala del Mappamondo. He also painted *St. Louis of Toulouse Crowning Robert of Anjou, King of Naples*.

ANSWER: Simone **Martini**

2. In 2011, this man was interviewed by the FBI based on a tip from the Russian government. For 10 points each:

[10] Name this man killed in shootout with police in Watertown, Massachusetts, who along with his brother planned the Boston Marathon bombing.

ANSWER: **Tamerlan Tsarnaev** [prompt on **Tsarnaev**]

[10] Tamerlan Tsarnaev's family lives in this region of Russia, which is famous for being next door to Chechnya, whose secessionist movement has sometimes spilled over to here.

ANSWER: **Dagestan**

[10] This city is the capital of Dagestan. Tamerlan's father lives here, and when interviewed said that his sons were set up.

ANSWER: **Makhachkala**

3. LIGO uses an interferometer in an attempt to detect waves that are coherent states of these particles. For 10 points each:

[10] Name these hypothetical, self-adjoint spin-2 bosons that mediate the weakest force according to unified field theories.

ANSWER: **gravitons** [prompt on **G**]

[10] Gravitons are spin-2 tensor bosons as they are sourced by this quantity. The components of this rank-2 tensor give the flux of each component of 4-momentum in each direction.

ANSWER: the **stress-energy** tensor [prompt on **T**]

[10] Gravity wave interferometers like LIGO use these as their detector apparatus. Named for their creator, these systems consist of pairs of massive, supercooled and isolated aluminum cylinders. When separated, their differential vibrations should evince gravity waves if any exist.

ANSWER: **Weber bars** [prompt on **gravitational** wave **antenna**]

4. One method of paying for these reforms was in state confiscation of uninherited timars after their holders died, which also acted as a check on the power of derebeys. For 10 points each:

[10] Name this reform package initiated by Selim III in 1793, which also lends its name to the European-style troops, such as the Topiji artillerymen, it created, and which helped Selim to expel Napoleon's forces from Syria.

ANSWER: **Nizam-i-Jadid** [or **Nizem-i-Cedid**; or **New Order**]

[10] This more famous Ottoman reform was launched in 1839 by Mahmud II. This reform included the abolishment of slavery and a new tax structure, and its name translates as reorganization.

ANSWER: **Tanzimat**

[10] Both Nizam-i-Jadid and the Tanzimat brought Selim and Mahmud into conflict with these formerly Christian soldiers, who were massacred in the Auspicious Incident.

ANSWER: **Janissaries**

5. In 1760, this author's poem "An Evening Thought" became first poem published by an African-American. For 10 points each:

[10] Name this slave from Long Island, who called for the emancipation of younger slaves in his essay "Address to the Negroes of the State of New York."

ANSWER: Jupiter **Hammon**

[10] Hammon's poems are in ballad stanzas with alternating rhymes, a style this 17th century minister used in his Puritan poem about the Last Judgment, "The Day of Doom."

ANSWER: Michael **Wigglesworth**

[10] One of Hammon's most famous works is a poem addressed to this fellow African-American poet of "On being brought from Africa to America" and "To His Excellency, George Washington."

ANSWER: Phillis **Wheatley**

6. The major current industrial process to make it is the Atofina-PCUK cycle, which involves the oxidation of ammonia with hydrogen peroxide. For 10 points each:

[10] Name this reactive nitrogenous compound used in the Wolff-Kishner reduction.

ANSWER: **hydrazine** [or **diazane**]

[10] Similar to the Wolff-Kishner reaction, this also doubly-eponymous reaction converts an aldehyde or ketone to an alkene. First, a tosylhydrazone is formed, which is then decomposed with a base, proceeding through a carbene or carbenium ion intermediate.

ANSWER: **Bamford-Stevens** reaction

[10] And similar to the Bamford-Stevens reaction is this variant that uses an alkyllithium reagent as the base. The resulting vinylolithium can be worked up with water to the alkene, or coupled with an electrophile.

ANSWER: **Shapiro** reaction

7. This novel's narrator falls in love with Micol after being invited to play tennis in the title location. For 10 points each:

[10] Name this Giorgio Bassani novel about the a family of rich Italian Jews under fascism. Vittorio de Sica's adaptation of it won the 1971 best foreign film Academy Award.

ANSWER: *The **Garden of the Finzi-Continis*** [or *Il **Giardino dei Finzi-Contini***]

[10] This novel by Ignazio Silone focuses on Pietro Spina, a Communist who disguises himself as a priest named Paulo Spada to avoid being imprisoned by the Fascists.

ANSWER: **Bread and Wine** [or **Vino e pane**]

[10] This Italian author wrote many novels about Nietzschean superman, including *The Intruder* and *The Triumph of Death*. He later became a major supporter of Fascism and occupied Fiume in 1919.

ANSWER: Gabriele **D'Annunzio**

8. Its leaders included Hugh of O'Neil and Red Hugh O'Donnel and it was defeated by George Carew and the Baron Mountjoy who induced famine by using scorched earth policies. For 10 points each:

[10] Name this long rebellion in Ireland against Tudor rule.

ANSWER: **Tyrone's** Rebellion [or the **Nine-Year War**]

[10] Tyrone's Rebellion occurred during this monarch's reign which also saw the defeat of the Spanish Armada. Her successor would pardon the rebel leaders, though their position and income were diminished.

ANSWER: **Elizabeth I** [prompt on **Elizabeth**]

[10] This favorite and possible lover of Elizabeth I ran an ineffective military campaign during Tyrone's Rebellion; in 1601 he was executed after a failed coup against the queen.

ANSWER: Robert **Devereux** [or Earl of **Essex**]

9. In probably the most famous story about this figure, he slays the dragon Orochi and creates a sword known as Grass-Cutter from its tail, which he presents as a peace offering to his sister, Amaterasu. For 10 points each:

[10] Name this Shinto god of the sea and storms.

ANSWER: **Susanoo**

[10] In one story, Susanoo and Amaterasu get into a person-creating contest, in which she uses his sword to create three women. Susanoo, on the other hand, uses one of these belonging to Amaterasu to create five men.

ANSWER: **necklace** [prompt on stuff like piece of **jewelry**, I guess]

[10] In between raising storms, killing stuff, and making people from necklaces, Susanoo finds time to rule over this place, the Shinto realm of the dead. In a masterstroke of causality, Izanagi created Susanoo by cleansing himself from his trip here. Don't eat the food here, or you can never leave!

ANSWER: **Yomi**

10. This play was initially published as the first of its author's *Bells and Pomegranates*. For 10 points each:

[10] Name this closet drama about a young girl wandering the countryside of Asolo. It includes the frequently parodied line "God's in his heaven, all's right with the world!"

ANSWER: **Pippa Passes**

[10] *Pippa Passes* was written by this British author, whose dramatic monologues include "Porphyria's Lover" and "Fra Lippo Lippi."

ANSWER: **Robert Browning** [prompt on **Browning**]

[10] This novel makes fun of *Pippa Passes* in a scene where a young boy declares "Here Papa pisses." Its self-referential index includes a game of "word golf."

ANSWER: **Pale Fire**

11. The single track of this piece of infrastructure led to delays in supplying Russian forces during the Russo-Japanese War. For 10 points each:

[10] Name this Russian railway that connects Yaroslavsky Terminal in Moscow to Vladivostak originally built to supply food for the colonization of the Russian Far East.

ANSWER: **Trans-Siberian Railroad**

[10] This Minister of Finance and the Director of Railway Affairs under Alexander III pushed for the building of infrastructure including the Tran-Siberian Railroad. He would latter negotiate the Treaty of Portsmouth though he opposed the Russo-Japanese War.

ANWER: Sergei **Witte**

[10] Witte first came to the prominence after the investigation of this accident that occurred while the tsar was traveling from Crimea to St. Petersburg. It saw the deaths of 22 people while Alexander III and his family remained unharmed. Witte had advocated for slower train speeds before it.

ANSWER: **Borki** Train Disaster



12. This photographer depicted a man reading the newspaper headline “PAL TELLS HOW GUNGIRL KILLED” in *Subway Passengers*. For 10 points each:

[10] Identify this photographer who captured Allie Mae Burroughs against the wall of her family’s cabin in one of his Hale County photos.

ANSWER: Walker **Evans**

[10] Evans’ 1966 photography collection, *Many Are Called*, contained an introduction by this author, whom Evans also collaborated with on *Let Us Now Praise Famous Men*. He wrote *A Death in the Family*.

ANSWER: James **Agee**

[10] Lincoln Kirstein was particularly impressed by a Walker Evans portrait of a torn movie poster. This man designed iconic film posters such as the ones for *The Shining* and *The Man With the Golden Arm*.

ANSWER: Saul **Bass**

13. Basaltic lava can do some amazing things. For 10 points each:

[10] This very common basaltic lava formation results from subaqueous extrusions, i.e. the eruption of lava under water.

ANSWER: **pillow** lava [or **hyaloclastite**]

[10] On the other hand, when lava or magma contacts wet sediment, this form of sedimentary rock containing glassy, dark basaltic granules can form.

ANSWER: **peprites**

[10] These systems are in some ways converse to peprites: they form when vesicles or voids in basaltic lava are backfilled with a zeolite, quartz, or a similar material, which often fills concentrically. They are named for the shape of the intrusion, rather than its color.

ANSWER: **amygdules**

14. For 10 points each, name some syncretic religions.

[10] This Vietnamese religion with its own pope has 2-3 million followers and has many prominent French figures as saints.

ANSWER: **Cao Dai**

[10] This syncretic religion, founded in Japan by Masaharu Taniguchi in 1930, combines elements from Buddhism, Christianity, and Shintoism. Its name means “The Home of Infinite Life and Progress” and it boasts around eight hundred thousand followers.

ANSWER: **Seicho-no-Ie**

[10] This syncretic religion founded by Akbar the Great was an attempt to reconcile the religious differences of his subjects and blended elements from Islam, Hinduism, Zoroastrianism, Jainism, and Christianity. Unfortunately for Akbar, it only ever numbered 19 adherents.

ANSWER: Din-e **Ilahi** [or **Ilahism**]

15. The Morris water maze and radial arm maze test this type of memory in rats. For 10 points each:

[10] Name this type of memory, which is often tested in tandem with visual memory. It is accessed in order to form a cognitive map.

ANSWER: spatial memory

[10] This part of the limbic system plays an important role in storing spatial memories. It is located beneath the cerebral cortex, and is critical for the formation of new memories.

ANSWER: hippocampus

[10] Karl Lashley wrote an article about his inability to find a single location of these physical traces of memories in the brain. He theorized that they are caused by physical or biological changes in neurons after a specific experience.

ANSWER: engrams

16. Its first book ends with a piece inspired by the death of its composer's daughter Olga, "The Barn Owl Has Not Flown Away." For 10 points each:

[10] Name this cycle of short piano pieces inspired by Moravian folk melodies, which includes "Words Fail!" and "Unutterable Anguish."

ANSWER: On an Overgrown Path [or On the Overgrown Path; or Po Zarostlem chodnicku]

[10] This Czech composer wrote *On an Overgrown Path*, as well as a frequently-performed *Sinfonietta* and the *Glagolitic Mass*.

ANSWER: Leos Janacek

[10] Janacek used a historical novel as the basis for this programmatic orchestral rhapsody, which begins with an English Horn solo representing the ill-fated love of Andrey. Its third and final movement depicts the "prophecy and death" of the title character.

ANSWER: Taras Bulba

17. Identify these things about the early Temperance movement, for 10 points each:

[10] After hearing "go to Kiowa" from God, this woman began her spree of smashing bars and saloons to save men from "a drunkard's fate." She was famous for using a hatchet.

ANSWER: Carrie Nation

[10] Carrie Nation was part of this group that encouraged mass praying by members in front of saloons. Its members included Francis Willard and its agenda was later expanded to include woman's suffrage and prison reform.

ANSWER: Women's Christian Temperance Union [or WCTU]

[10] Naming themselves after a president, this group was formed in Chase's Tavern in Baltimore and emphasized individual sobriety with mutual support from other society members over a larger societal change. Timothy Shay Arthur wrote *Six Nights* with this organization.

ANSWER: Washingtonian Total Abstinence Society [or the Washingtonian Temperance Society or the BU Washingtonian Society or the Washingtonians]

18. The title character of this dialogue is silent as most of the talking is done by his Sophist friend Protarchus, who ultimately agrees there are diverse kinds of pleasure. For 10 points each:

[10] Name this dialogue in which Socrates argues that pleasure is not the highest virtue.

ANSWER: Philebus

[10] This philosopher used a chair, a chandelier and printed excerpts from *Philebus* and Mallarmé in an odd, elaborately staged lecture about literature in 1969, shortly after the publication of *Writing and Difference*.

ANSWER: Jacques Derrida

[10] An analysis of *Philebus* is featured in this thinker's early "Plato's Dialectical Ethics" and his late essay "Plato as Portraitist." Another notable short work by this 20th century thinker is "The Relevance of the Beautiful."

ANSWER: Hans-Georg Gadamer

19. These structures are named for a synthetic amino acid which interacts as a specific agonist to them, in contrast to the neurotransmitter that normally acts on them. For 10 points each:

[10] Name these heterotetrameric non-specific cation channels that are blocked by extracellular magnesium until a voltage is applied. They are antagonized by ketamine and phencyclidine among other compounds.

ANSWER: NMDA Receptor [or NMDAR (*N*-methyl-D-aspartate)]

[10] Though NMDARs also require co-activation by either D-serine or glycine, they are primarily considered a receptor for this excitatory neurotransmitter. Other receptors for this molecule include AMPA receptors and kainate receptors.

ANSWER: glutamate [or glutamic Acid]

[10] In this process, persistent activation of NMDARs causes the activation of CaMKII and PKC which phosphorylate AMPA receptors. Later gene expression and protein synthesis in this process leads to morphological changes at the synapse and a long-lived boost in transmission between two neurons.

ANSWER: Long-Term Potentiation [or LTP]

20. The protagonist of this novel is unable to wed his cousin after he loses his job, incurring the wrath of his aunt, Omasa. For 10 points each:

[10] Name this novel about Utsumi Bunzo's failed courtship of Sonoda Osei. It was written by Futabatei Shimei, and is often called the first "modern Japanese novel."

ANSWER: Ukigumo [or *The Floating Cloud* or *The Drifting Cloud*]

[10] Futabatei also translated some of the stories in this Russian author's collection *A Sportsman's Sketches*, as well as his novel *Fathers and Sons*.

ANSWER: Ivan Sergeyevich Turgenev

[10] In *Ukigumo*, this manipulative suck-up is Bunzo's rival for Osei's affections. He shares his name with Kumiko's brother in *The Wind-Up Bird Chronicle* and with Fusako's son in *The Sailor Who Fell from Grace with the Sea*.

ANSWER: Honda Noboru [accept Wataya Noboru from *The Wind-Up Bird Chronicle* or Kuroda Noboru from *The Sailor Who Fell from Grace with the Sea*]