

Early Fall Tournament 2016 - "Auntie Vivian's daughter can answer these questions, why can't you?"

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Packet 5

TOSSUPS

1. This adjective titles a 2011 book by G. J. Eikenberry that argues that a recent decline in U.S. power is due to authority struggles over the international system. A 1996 book by George Lakoff associates people whose thought is described by this adjective with a "nurturing parent" attitude. It's not "international," but the idea of "complex interdependence" was developed by two authors who expanded on a theory of political relations of this name in *Power and Interdependence*; those authors are Robert Keohane and (*) Joseph Nye. The international relations theory described by this adjective argues that rejecting power politics is the outcome of cooperation; that theory is opposed to realism. For 10 points, name this adjective typically contrasted in political science with "conservative."

ANSWER: liberal [accept Liberal *Leviathan* or liberalism or neoliberalism] (the Lakoff book is *Moral Politics*) <SocSci, WA>

2. In a play, this character dances in a white gown on top of the cave from which dead souls are annually released to harass their living tormentors. In another play, this character is consoled by a chorus of palace virgins upon learning of a brother's death in a chariot accident, which turns out to be faked. This character submits her past for judgment by the "lord of flies and death" in a play by Jean-Paul Sartre. In a play's opening, after this character finds a lock of hair familiar to her own on a tomb, she is approached by (*) two men in hiding - her long-lost brother and his companion Pylades. She is castigated by the Dioscuri for working with that brother to plot the murder of her mother, who slept with Aegisthus while her father Agamemnon was at war. For 10 points, name this sister of Orestes.

ANSWER: Electra <OLit, WA>

3. This god destroys a ritual sacrifice ceremony when his first wife immolates herself after being humiliated by her estranged father. During that incident, this god is accompanied by his attendants, the *ganas*, as he manifests as the terrifying Virabhadra. This god wields the two-headed *damaru* drum on his trident, which is called the *trishula*. He and his wife are encircled three times during a (*) race between two of their children. He inhales the poison emitted during the churning of the ocean, which turns his throat blue. When he is refused entry into his own home, this god furiously cuts off his son's head, but later fashions him the head of an elephant as a replacement. This father of Ganesha is the husband of Parvati. For 10 points, name this Hindu god of destruction.

ANSWER: Shiva <Myth, EK>

4. This non-royal person tried to escape the Castle of Beaurevoir by leaping from the 60-foot tall tower. Forces commanded by this person captured John Talbot in the Battle of Patay. This leader was wounded while storming a fortress called "les Tourelles." This advisor to John of Alençon [ah-luhn-soh] was captured in Compiègne by the forces of Philip the Good. Twenty years after dying, this victor in the Loire campaign was vindicated in an investigation by (*) Calixtus III. This leader convinced Robert de Baudricourt to allow this person to go to Chinon. This person arranged the crowning of Charles VII in Reims. Pierre Cauchon tried and burnt this person at the stake for crossdressing and alleging to receive visions from Saint Michael. For 10 points, name this warrior maid who lifted the English siege of Orleans.

ANSWER: Saint Joan of Arc [or Jeanne d'Arc; prompt on the Maid of Orleans until "maid"] <EuroHist, JZ>

5. A protein discovered in this organism binds to a pair of SH3 domains on GRB2 in the MAP kinase pathway, where it serves as a guanine nucleotide exchange factor for Ras. That protein was found to activate downstream of another gene in this organism necessary for proper development of the R7 photoreceptor. The polarity of this organism's oocytes are determined by maternal effect genes, such as (*) *bicoid* and *hunchback*. A transposon found in this organism is called the P element. Hox genes were discovered in this organism, whose *Sevenless* gene codes for the UV sensing portion of its ommatidia. Sex-linked traits were found in this organism when Thomas Hunt Morgan bred a white-eyed mutant and found a generation of red-eyed offspring. For 10 points, name this insect model organism commonly known as the fruit fly.

ANSWER: Drosophila melanogaster [accept D. melanogaster; accept fruit fly before mentioned] <Bio, AW>

6. This man coined a term describing organizations like "the Knights of Columbus, the Grange, Hadassah," that have a "brilliant diversity spread like stars." A speech conceding the presidential nomination to this man proclaimed "a cultural war... for the soul of America" and asked the speaker's namesake "brigades" to support this man. Peggy Noonan wrote this man's speech that promoted volunteer groups as (*) "a thousand points of light." This man called his predecessor's policies "voodoo economics" and was lampooned for his failed campaign promise "Read my lips: no new taxes" by Pat Buchanan. Lloyd Bentsen said, "Senator, you're no Jack Kennedy" in a debate with this man's running mate Dan Quayle. For 10 points, name this president who was defeated by Bill Clinton in 1992.

ANSWER: George Herbert Walker Bush [or Bush 1; prompt on Bush] <AmHist, RY>

7. This geographic feature is the one most often accessed by religious devotees descending *ghat* stairs. This is the most sacred geographic feature into which the remains of the last rites of the *antyeshti* ritual are placed. This geographic feature is often metaphorically referred to as *mata*, or "mother" referring to its centrality in culture. This thing's human personification is depicted clad in white and holding a lotus; as a (*) goddess, that representation of this thing had her descent broken by the rocks of Mount Kailash. Ash is often scattered into this body, causing some pollution for the thousands of people bathe in it during the Kumbh Mela pilgrimage. The city of Varanasi is found on the banks of – for 10 points – what river, most sacred to Hindus and longest in India?

ANSWER: Ganges River [or Ganga] <Rel, WA>

8. This European language was used to write a poem that opens "North and West and South up-breaking" titled *Hejira*, which is from a collection of twelve poems inspired by reading Hafez. The title character of a poem in this language promises a child that his beautiful daughters will wait on him and lead him in nightly dance. The *West-Eastern Divan* was written in this language, as was a poem which describes a man riding in the night who ignore his son's fears of an (*) elf-like creature. At the end of a poem in this language, a hapless man drowns in his boat looking up at a mountain thanks to a river-maiden with golden hair. This language was used for *The Lorelei*, as well as a poem stating "Joy, beautiful spark of the Gods / Daughter of Elysium." For 10 points, identify this language of "Ode to Joy" by Friedrich Schiller.

ANSWER: German [or Deutsch] <EuroLit, WA>

9. A seven-movement E major solo piece for this instrument begins with a "Preludio" and includes a "Gavotte en rondeau." J.S. Bach's two concertos for this instrument are in A minor and in E major. Two of these instruments are found in the standard instrumentation for a trio sonata. Along with a flute and a harpsichord, this instrument has a solo part in the fifth Brandenburg Concerto. This instrument plays the melody of the second movement of the third (*) orchestral suite by Bach, who also wrote a lengthy D minor chaconne for it as part of a collection of six solo sonatas and partitas. This instrument is given a prominent solo part in the *Air on the G String*. For 10 points, name this smallest string instrument.

ANSWER: violin <Music, EK>

10. The dynamic phase factor for a particle undergoing an adiabatic process equals minus one over \hbar times the time integral of this quantity. This quantity is negative for the bound-state solution of the Dirac delta well. For a finite well, the wavefunction outside the well transitions from evanescent to oscillatory as this quantity increases past the well depth. This quantity equals one-half times \hbar times omega for the ground state of the (*) quantum harmonic oscillator. The eigenvalues of the time-independent Schrödinger equation correspond to this quantity, which is represented in quantum mechanics by the Hamiltonian. The first law of thermodynamics states the conservation of this quantity, which equals mgh plus one-half mv squared for an object in free fall. For 10 points, name this quantity denoted E which comes in “kinetic” and “potential” forms.

ANSWER: total energy <Phys, BB>

11. A 1958 article titled for this discipline argues that *it* can't be advanced without a good philosophy of psychology and criticizes *it* for lacking opinion diversity. Egoism, intuitionism, and a third approach to this discipline are discussed in the best-known work of Henry Sidgwick. A project carried out in this discipline since the Enlightenment has wrongly discarded its core ancient concepts according to a 1981 book by Alistair MacIntyre that furthered the “aretic turn.” The term (*) “consequentialism” was introduced in a paper titled for this discipline written by G. E. M. Anscombe. Problems in this discipline include Philippa Foot's “trolley problem.” The concept of “virtue” was revived in the late 20th century in – for 10 points – what branch of philosophy that studies right and wrong?

ANSWER: ethics [or ethical philosophy; or moral philosophy; accept virtue ethics or *The Methods of Ethics*; accept “Modern Moral Philosophy”] <Phil, WA>

12. These people built terraced hill forts called *pā* and had their language documented by Thomas Kendall. The ship *Hazard* bombarded a town controlled by members of this ethnicity after they cut down an object on a hill given as a gift to James Rusby. These people attempted to raise a powerful monarch during their “King Movement.” Duncan Cameron crushed a revolt of these people in the (*) Taranaki region. They fought the Flagstaff War under Hono Heke. Tribes of this people experienced bitter infighting in the Musket Wars. These people massacred the Pacific Moriori people of the Chatham islands. William Hobson got them to surrender their sovereignty in the controversial Treaty of Waitangi. For 10 points, name this indigenous people of New Zealand.

ANSWER: Maori <EuroHist, JZ>

13. For a transition to be active in this technique, the transition moment operator must transform as one of x , y , or z . Geometries of molecules analyzed by this technique can be deduced by analyzing the shapes of the P, Q, and R branches of individual peaks. For centrosymmetric molecules, the rule of mutual exclusion states that transitions active in this technique cannot be (*) Raman active, and like in Raman spectroscopy, molecules analyzed by this technique can be modelled by a quantum harmonic oscillator. Bond strength is correlated with peak frequency in this technique according to Badger's rule. Carbonyls have a distinctive 1750 cm^{-1} [inverse centimeter] peak in this technique, which measures vibrational transitions in the hundred to thousand wavenumber range. For 10 points, name this technique that probes molecules with light with longer wavelengths than visible light.

ANSWER: IR spectroscopy [or infrared spectroscopy; prompt on IR; prompt on vibrational spectroscopy or vibrational spectroscopy] <Chem, AW>

14. Michael Levey argued that the “claustrophobic” courtyard in this painting has been entirely taken up by the bare brick in the background. A smaller version of this painting in Toledo, Ohio was painted by its artist and his pupil Anne-Louis Girodet [zhee-roh-day]. At its far right, this painting shows two women who are either asleep or fainting, one of whom has a turquoise headband. This painting is compositionally divided into (*) three sections framed by three arches in the background, which lie behind a woman in dark blue comforting children. This painting, which is rooted in a story of a dispute with Alba Longa, shows a father holding out three swords towards three saluting men with outstretched hands. For 10 points, name this Jacques-Louis David painting of a vow taken by Roman brothers.

ANSWER: The Oath of the Horatii [or *Le Serment des Horaces*] <Painting, PC>

15. Beerbohm Tree staged a 1904 performance of this play that made the Darwinist “missing link” portrayal of one of its characters popular until the 1930s. Many productions of this play cut out its Act IV masque, which features Iris and Ceres bestowing their blessings, after which three conspirators are chased down and captured by hunting dogs. That masque from this play ends with its host musing that “We are such stuff / As (*) dreams are made on.” In this play, Stephano and Trinculo are caught while trying to carry out an assassination plot during the marriage of Ferdinand and Miranda with Caliban’s help. For 10 points, name this Shakespeare play in which Prospero shipwrecks several noblemen on his island by calling up the title storm.

ANSWER: *The Tempest* <BritLit, JC>

16. He’s not Idi Amin, but this leader’s distrust of Asian citizens of his country is detailed in the writings of J. M. Nazareth. This leader’s economic policy was advised by an economist sent by Tom Mboya’s “African Airlift” program to the University of Hawaii, whom he later blacklisted, and was built around community self-help events called “Harambee.” He banned the opposition KPU party following 1969 elections, after which (*) Oginga Odinga became his Vice President. The book *Dreams from My Father* recounts conflicts this predecessor of Daniel Arap Moi had with Barack Obama, Sr. Along with the rest of the Kapenguria Six, this leader of the KANU party was arrested for participating in the Mau Mau revolt. For 10 points, name this first President of Kenya.

ANSWER: Jomo Kenyatta <WorldHist, WA>

17. A jerky-like substance whose name means “beef rope” was eaten by the cowboys of this region. Those cowboys were called *paniolo*, a name which may come from the word “Español” since this region’s language does not have an “s” sound. Food is commonly served with two scoops of rice and macaroni salad in this region in a meal simply called a “plate lunch.” This region created a dish consisting of a hamburger patty, fried egg, and gravy on top of rice called a (*) loco moco. Dishes from this place include a mashed taro paste called *poi*, as well as pork wrapped in banana leaves and cooked in an underground oven. A marinated ahi tuna salad from this region is called poke [POH-kay]. A food found in this state is effectively a piece of onigiri with a piece of grilled spam on top of it. For 10 points, name this U.S. state home to kalua pork, which may be eaten at a luau.

ANSWER: Hawaii [or Hawaiian islands; prompt on Polynesia] <Other, AW>

18. Josiah Gibbs names a method for finding these systems that only requires knowing three coplanar position vectors. The velocities of bodies involved in these systems described by this word can be calculated using the vis-viva equation. The most efficient process to move between these utilizes two instantaneous velocity changes and follows a half-elliptical path; that (*) transfer one is named for Hohmann. When that type of system described by this word occurs with respect to a satellite, its most extreme points are known as the periapsis and the apoapsis. The theory of epicycles was developed to explain “retrograde” examples of these paths. For 10 points, name these trajectories of planets, which for Earth takes 365 days to complete.

ANSWER: orbits [accept word forms like orbital or orbital motion] <OSci, RH>

19. This musician gave a horn solo to John Coltrane on the second track of a 1957 album whose cover depicts this musician seated in a red wheelbarrow. This composer plays celesta instead of his usual instrument on the track "Pannonica." In a 1963 album, this composer covered "Ba-Lue Bolivar Ba-Lues Are" from an earlier album that includes a cover of "I Surrender, Dear" and closes with "Bemsha Swing." This composer wrote albums titled for his (*) *Music* and for his *Dream*, and as a pianist, was known for the piercing, angular technique he used in such standards as "Well, You Needn't" and "Epistrophy." This musician wrote the album *Brilliant Corners* and penned the standard "Straight, No Chaser." For 10 points, name this jazz pianist who wrote "'Round Midnight."

ANSWER: Thelonious Monk [or Thelonious Sphere Monk] <OArts, EK>

20. A story by this author ends with a man dying before he can add a candle to an altar for the despised Acton Hague. In another story by this author, a man wakes up in Alice's lap after he faints while chasing the ghost of the successful businessman he might have become. This author of "The Altar of the Dead" wrote about Spencer Brydon in "The Jolly Corner." The protagonist of a story by this author sees "a horror" glaring at her from outside a dining room window, which she later identifies as the apparition of (*) Peter Quint. This author wrote about an unnamed governess who struggles with the ghosts of Quint and Miss Jessel while taking care of Miles and Flora. For 10 points, name this author of *The Turn of the Screw*.

ANSWER: Henry James <AmLit, JC>

IF THE GAME IS A TIE AFTER REGULATION: Report to the tournament director. Then, read a bonus from the tiebreakers packet that the tournament director determines the team has not yet heard.

BONUSES

1. A series of “luminaries” of this philosophical doctrine painted by Levi Ponce include Albert Einstein, who was arguably its most prominent 20th-century exponent. For 10 points each:

[10] Identify this philosophical position about God’s nature, which essentially equates God with the infinite universe. Its most famous proponent was Baruch Spinoza.

ANSWER: **pantheism**

[10] This philosopher tried to refute pantheism by asserting that all things are ultimately dependent on a single cause, an idea called the “principle of sufficient reason,” in books like *Theodicy*.

ANSWER: Gottfried Wilhelm **Leibniz**

[10] Pantheism, deism, and other non-traditional views of God’s nature became popular during this 18th-century European philosophical movement, which emphasized reason as the source of legitimacy.

ANSWER: The **Enlightenment** [or Age of **Enlightenment**] <Phil, WA>

2. Answer the following about important women from Chinese history, for 10 points each.

[10] Wu Zetian, the most powerful female ruler in Chinese history, interrupted the rule of this dynasty with her own Zhou dynasty. This dynasty ruled in the 7th through 9th centuries and brought Chinese rule deep into Central Asia.

ANSWER: **Tang** dynasty

[10] This surname belonged to three extremely politically powerful sisters in early 20th-century China.

One of them, Mei-Ling, married Chiang Kai-Shek, while another, Ching-Ling, married Sun Yat-Sen.

ANSWER: **Soong** sisters [Soong Mei-Ling, Ching-Ling, and Ai-Ling; or **Sòngjiā Jiěmèi**]

[10] This collective name is given to several famous ancient Chinese women whose lives ended in tragedy. They include Yang Guifei, who was executed during the An Lushan rebellion, and Xi Shi, who was said to make fish drown with her sight.

ANSWER: **Four Beauties** [or **Four** Great **Beauties**] <WorldHist, WA>

3. The electoral ward named for this town also contains Windsor Castle. For 10 points each:

[10] Name this British town, which is by far best known as the home of arguably the most prestigious boarding school in Britain, a school attended by David Cameron.

ANSWER: **Eton** [accept **Eton** College]

[10] Eton and Windsor are separated by this river, which flows through London on its way to the Channel.

ANSWER: River **Thames**

[10] Eton is found in this ceremonial county of England, whose namesake “downs,” a series of chalk formations, contain the Uffington White Horse. It lends its name to a set of highlands in western Massachusetts and Connecticut.

ANSWER: **Berkshire** [or The **Berkshires**] <Other, WA>

4. In a novel by this author, Shusai is outraged by his opponent Otake's decision to play a forcing move as his last, sealed, play before a scheduled two-day break to give himself more time to ponder the game. For 10 points each:

[10] Name this Japanese author of *The Master of Go* and *Snow Country*.

ANSWER: Yasunari **Kawabata** [or **Kawabata** Yasunari]

[10] This Kawabata novel centers on Shingo's relationship with Kikuko, who is unhappily married to Shingo's son Shuichi. Its title refers to a disturbing noise Shingo hears in his sleep.

ANSWER: *The **Sound of the Mountain*** [or **Yama no Oto**]

[10] In *The Sound of the Mountain*, a deceased coworker leaves Shingo a pair of these items. These items title a novel by Fumiko Enchi, as well as a novel about a man who fails to fall in love with a girl named Sonoko.

ANSWER: **masks** [or **men**; accept **Masks** or **Onnamen**; accept *Confessions of a **Mask*** or **Kamen** *no kokuhaku*; accept Noh **masks**] <OLit, RY>

5. This technique can be used to identify protein-DNA interactions through EMSA, which looks for a band shift. For 10 points each:

[10] Identify this technique, which uses a matrix such as polyacrylamide or agarose to separate bands of DNA or protein by mass.

ANSWER: gel **electrophoresis**

[10] When performing protein gel electrophoresis, the proteins are typically denatured with this twelve-carbon detergent, which helps linearize the proteins and provides an appropriate amount of charge per unit mass.

ANSWER: **sodium dodecyl sulfate** [or **SDS**]

[10] To fully denature proteins, disulfide bonds may be broken using reducing agents such as the odorless TCEP. Name either of the two unpleasant-smelling thiols also commonly used to reduce disulfide bonds for SDS-PAGE [S-D-S-"page"].

ANSWER: **dithiothreitol** OR 2-**mercaptoethanol** [accept **Cleland's reagent** or **DTT** or beta**mercaptoethanol** or **BME**] <Bio, AW>

6. This symphony's second-movement scherzo calls for a solo violin with each string tuned up a whole step. For 10 points each:

[10] Name this G major symphony, the last by its composer to set a song from his collection *Des Knaben Wunderhorn*.

ANSWER: Symphony No. **4** by Gustav **Mahler** [or **Mahler's Fourth** Symphony; or obvious equivalents; prompt on partial answer]

[10] This Mahler symphony begins its funeral march first movement with a solo for unaccompanied trumpet. Some consider its fourth movement Adagietto to be a declaration of love for his wife Alma.

ANSWER: Symphony No. **5** by Gustav Mahler [or Mahler's **Fifth** Symphony; or obvious equivalents]

[10] The Adagietto movement of Mahler's Symphony No. 5 calls for one of these tall wooden instruments, whose forty-seven vertical strings are plucked by a seated musician.

ANSWER: **harp** <Music, EK>

7. Invading Egypt sure can get messy. For 10 points each:

[10] According to Herodotus, the invasion of Egypt by this empire's king Sennacherib was stymied when mice ate the bowstrings of his army. This empire with capital at Nineveh was later ruled by Ashurbanipal.

ANSWER: Assyrian empire [or Neo-Assyrian empire]

[10] Although this ruler did conquer Egypt by defeating Psamtik III at the Battle of Pelusium, one of his armies was supposedly buried in a sandstorm while attempting to seize the oracle of Amon.

ANSWER: Cambyzes II [or Kanbuzi II]

[10] A more successful invasion of Egypt was conducted by this Semitic people who introduced the composite bow and chariot. They made Avaris the capital and ended the Middle Kingdom, establishing the 15th Dynasty.

ANSWER: Hyksos [or Rulers of Foreign Countries; accept synonyms] <Brit/ClassHist, JZ>

8. In a 1990 docufiction film with this title, the director explains his use of this technique before filming Hossein Sabzian's confession for impersonating a famous director. For 10 points each:

[10] Name this type of cinematic shot that depicts an object from a near distance; it may be "extreme" if it frames only a single feature of the subject's body.

ANSWER: close-up shot [or Close-Up; or Kluzap]

[10] This director of a film titled *Close-Up* also created Badii, who offers people money to bury him after his suicide, in the film *Taste of Cherry*.

ANSWER: Abbas Kiarostami

[10] This director also created a film titled for a film technique, *Day for Night*. He's better known for depicting the struggles of Antoine Doinel in *The 400 Blows*.

ANSWER: François Truffaut <OArts, RY>

9. One of these works addressed to a friend nicknamed "Socrates" asks him to keep these works out of the public eye, and their author compiled them after coming across a similar collection by Cicero. For 10 points each:

[10] Identify these works, one of which describes the birthday of alpinism. In that example of these works, its author claims to be the first person since antiquity to climb a mountain for the view.

ANSWER: letters of Petrarch [accept equivalents clearly stating letters that Petrarch wrote; accept Epistolae familiares; prompt on Ascent of Mont Ventoux]

[10] This collection of poetry by Petrarch was unusually written in vernacular and largely focuses on his love for a woman named Laura. Renaissance scholars studying it later gave it a name roughly translating to "The Songbook."

ANSWER: *Il canzoniere* [accept Rime sparse or Scattered Rhymes]

[10] In *Secretum Meum*, Petrarch imagines an intense dialogue with this saint from Hippo who wrote *Confessions* and *City of God*.

ANSWER: St. Augustine of Hippo <EuroLit, JC>

10. When he sees a work of art in this city, a man asks his friend Achates whether there is anywhere on Earth that does not know their hardships. For 10 points each:

[10] Name this city home to a bronze temple to Juno and an enormous mural depicting heroes, which leads a man to cry "tears for things," or *lacrimae rerum*, upon seeing them.

ANSWER: Carthage [or Carthago; or Qart-Hadasht]

[10] That mural in Carthage depicts the events of this ancient war, whose long siege is the subject of Homer's *Iliad*.

ANSWER: Trojan War

[10] This Carthaginian queen is subjected to her love affair with Aeneas after she unwisely gives Cupid a seat on her lap. She commits suicide after Aeneas leaves for Italy.

ANSWER: Dido [or Elissa] <Myth, EK/RY>

11. French and Dutch national referendums on the creation of this document soundly rejected it in 2005. For 10 points each:

[10] Identify this proposed document, which was discarded after those referendums and was replaced by the Lisbon Treaty, which provided pretty much the same thing. A description is acceptable.

ANSWER: constitution of Europe [accept any equivalents mentioning a constitution and Europe or the EU, i.e. "European constitution;" prompt on constitution alone]

[10] After rejecting the Lisbon Treaty in a 2008 referendum, this country was bullied by the EU into holding a second referendum in 2009, which passed the treaty. Around the same time, this non-Greece country's "tiger" economy was getting crushed by the financial crisis, leading to a bailout.

ANSWER: Ireland [or Éire; or Airlann]

[10] Though Poland and Britain got exceptions, the Lisbon Treaty gave legal force to the Charter of "Fundamental" [these things] used by the EU. A "Universal Declaration" of them is used by the UN.

ANSWER: (human) rights <EuroHist, WA>

12. For a two-dimensional flow, these lines are defined by constant values of a scalar field symbolized phi defined such that the curl of phi equals the velocity. For 10 points each:

[10] Name these lines that are locally tangent to the fluid velocity at all points. They represent the trajectory that a massless particle would follow if it were placed in the fluid.

ANSWER: streamlines

[10] The stream function is only defined for an incompressible flow, which is a flow for which this quantity is held constant. For water, this value equals 1000 kilograms per meter cubed.

ANSWER: density [accept rho]

[10] This equation states that, for two points along a streamline, the pressure plus rho g h plus one-half rho v squared is constant.

ANSWER: Bernoulli equation/principle <Phys, BB>

13. Allowing this system to govern a region is a common concession to Islamist separatist groups. For 10 points each:

[10] Name this body of legal code that guides the everyday actions of Muslims.

ANSWER: sharia

[10] This term, meaning "exertion," is used to refer to independent legal reasoning in Islam, or effectively creating new sharia. Following this sort of reasoning without directly examining scripture is called *taqlid*.

ANSWER: ijtihad

[10] This purist Islamic movement, as well the Salafi movement sometimes considered as an offshoot of it, discourages *taqlid* and promotes *ijtihad* as a way of creating a more pure Islam. It originated with an 18th-century revivalist in the Najd who preached against tomb-veneration.

ANSWER: Wahhabism [or Wahhabi Islam/Sunnism] <Rel, WA>

14. Ishmael Reed introduced a contemporary version of this literary genre while working on his novel *Flight to Canada*. For 10 points each:

[10] Identify this genre of literature typically made up of the written accounts of a certain group of people. An example of this genre is narrated by Solomon Northup.

ANSWER: slave narratives [accept neo-slave narratives; accept "slave fiction"; prompt on captivity literature]

[10] This canonical example of slave fiction by Harriet Beecher Stowe includes Eliza's escape from bondage and is credited as a primary cause of the climate leading to the Civil War.

ANSWER: Uncle Tom's Cabin

[10] This Afrofuturist wrote about Dana slipping back in time from the 20th century to encounter her ancestors, the slave Alice Greenwood and her disturbed master Rufus Weylin in the neo-slave narrative *Kindred*.

ANSWER: Octavia Butler [or Octavia Estelle Butler] <AmLit, JC>

15. An 1857 attempt at completing this project was carried out jointly by the USS *Niagara* and the HMS *Agamemnon*. For 10 points each:

[10] Identify this infrastructure project that was pioneered by Cyrus Field. It was finally constructed successfully in 1866 by what was then the world's largest ship, Isambard Brunel's SS *Great Eastern*.

ANSWER: transatlantic telegraph cable [accept equivalents describing a telegraph cable across the Atlantic Ocean; prompt on partial answer]

[10] This industrialist, who was one of Field's collaborators in the Atlantic Telegraph Company, built an innovative steam locomotive called *Tom Thumb* for the B&O Railroad, and founded a namesake engineering and art school in Manhattan.

ANSWER: Peter Cooper [accept Cooper Union]

[10] This President argued that the Constitution allowed the Federal government to restrict the expansion of slavery in his 1860 Cooper Union speech.

ANSWER: Abraham Lincoln <AmHist, RY>

16. The mnemonic LEO says GER is used to remember the individual components of one of these reactions. For 10 points each:

[10] Name this sort of reaction where electrons are transferred between species. This sort of reaction powers a galvanic cell.

ANSWER: redox reaction [or reduction-oxidation reaction; do NOT accept a partial answer]

[10] When balancing the reaction in a galvanic cell, it is typical to separate the redox reaction into the two reactions known by this term, which represent the individual oxidation and reduction.

ANSWER: half reactions

[10] Redox couples can be studied using this method, which measures the current in a sample after ramping up the voltage of a working electrode, and subsequently ramping the voltage the other direction.

ANSWER: cyclic voltammetry [accept CV; prompt on partial answer] <Chem, AW>

17. In this chapter, the night sky that two men see in a garden is described as "The heaventree of stars hung with humid nightblue fruit." For 10 points each:

[10] Name this seventeenth "episode" of the novel in which it appears. This chapter is written entirely in the question-and-answer form of a catechism, and appears between chapters titled "Eumaeus" and "Penelope."

ANSWER: "Ithaca"

[10] This author wrote about Leopold and Molly Bloom in *Ulysses*. He also wrote about Stephen Dedalus's coming of age in *A Portrait of the Artist as a Young Man*.

ANSWER: James Joyce [James Augustine Aloysius Joyce]

[10] This notoriously-difficult Joyce novel opens describing the "riverrun, past Eve and Adam's, from swerve of shore to bend of bay" and follows a crime committed in a dream by a family patriarch named HCE.

ANSWER: Finnegans Wake <BritLit, RY>

18. In an oil piece on wood, this creature is shown with multiple arms holding a painting of itself. For 10 points each:

[10] Name this creature who is presented as a red top in *Ubu Emperor*.

ANSWER: **Loplop**

[10] Loplop is the birdman alter-ego of this artist of *Ubu Emperor*, who may have scraped paint over the backbone of a fish in his *Forest and Dove* using grattage. His *Two Children Being Threatened by a Nightingale* was inspired by a dream he had while he was sick with measles.

ANSWER: Max **Ernst**

[10] Ernst is most often associated with Surrealism and this nonsensical art movement, which included Marcel Duchamp. It takes its name from the French for "hobbyhorse."

ANSWER: **Dadaism** <Painting, PC>

19. Specific examples of these conditions were added to the fourth edition of the DSM in 1994. For 10 points each:

[10] Identify this term from medical anthropology used to refer to manifestations of psychiatric and somatic behavior specific to certain cultures. They're often referred to as "folk illnesses."

ANSWER: **culture-bound syndromes** [or **culture-specific syndromes**; prompt on **behavioral epidemic**]

[10] Many of these people, particularly in the Great Plains, are affected by a culture-bound syndrome called "ghost sickness." Alfred Kroeber and Lewis Henry Morgan did most of their work among subgroups of these people.

ANSWER: **Native Americans** [or **Indigenous Americans**; or **American Indians**; prompt on **Indians**; accept any specific native Native American group]

[10] The DSM lists "rootwork" – an alternative name for hoodoo – among its culture-bound syndromes; rootwork and hoodoo come from this region of the United States, traveled widely by Frederick Law Olmstead.

ANSWER: The American **South** [accept **Deep South** specifically] <SocSci, WA>

20. Answer the following about the Mersenne Twister algorithm, for 10 points each.

[10] The Mersenne Twister is almost certainly the most widely used algorithm for performing this task. This task can also be accomplished with the Blum Blum Shub method.

ANSWER: Pseudo-**random number generation** [accept **RNG**]

[10] The Mersenne Twister is so-named because it chooses a very large Mersenne prime for this quantity. The most commonly used version of the algorithm chooses that number to be $2^{19937} - 1$ ["2 to the 19937 minus 1"].

ANSWER: **period**-length

[10] Generating pseudo-random numbers that well approximate true random number generators is key to this subfield of computer science, which is concerned with encoding messages and communications to hide them from parties who are not their intended recipients.

ANSWER: **cryptography** [or **cryptology** or **encryption**; accept **deception**] <OSci, RH>

IF ADDITIONAL BONUSES ARE NEEDED: Report to the tournament director. Then, read a bonus from the tiebreakers packet that the tournament director determines the team has not yet heard.