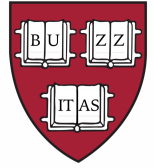


Harvard Fall Tournament XIV

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Packet 6

Tossups

1. In one poem, this poet described “love...taking up his bow” in order to “punish a thousand wrongs in a single day” and “make a graceful act of revenge.” This poet composed a narrative poem that discusses the death of Sofonispa and begins with the section *Scipio’s* [“SKIP-io”] *Dream*. Another poem by this man begins with the line “you who hear the sound, in (*) scattered rhymes.” That poem by this poet of *Africa* opens a collection of 366 sonnets about his love for a woman that he first encountered on Good Friday. For 10 points, name this Italian poet of the collection *Il Canzoniere* [“can-zoh-NYEH-ray”], which contains many poems written in his namesake sonnet form about Laura.

ANSWER: **Petrarch** (or Francesco **Petrarca**)

<Gioia, European Literature>

2. A war fought over the “heavenly” ones of these things involved the Han Dynasty and the Dayuan [“DAH-yuen”] people who lived in Fergana Valley. Roman dictators appointed a position known as the “Master” of one of these things. A tactic known as the Parthian shot required the skillful use of these animals. One of these animals legendarily (*) feared its own shadow, but was tamed by a young prince who later named a city in its memory. These animals, used by the Winged Hussars, were critical in lifting the 1683 Siege of Vienna. One of these animals named Bucephalus was a favorite of Alexander the Great. For 10 points, name these animals often used by cavalry units.

ANSWER: **horses**

<Suh, World History>

3. This scientist discovered alpha and beta radiation and coined the term gamma radiation. When this scientist irradiated nitrogen gas and observed the resulting emissions, he discovered that all atomic nuclei contain the hydrogen nucleus. This scientist names the diffraction of (*) alpha particles by an electric potential. That type of scattering, named after this scientist, was discovered in the same experiment which first showed that the nucleus was positively charged. This scientist’s most famous experiment involved the detection of alpha particles which scattered off heavy atomic nuclei. For 10 points, name this man who supervised the gold foil experiment.

ANSWER: Ernest **Rutherford**

<K. Li, Chemistry>

4. The 12 gates that lead into a compound in this city include one named for cotton merchants. Observants of the Nabi Musa Festival participate in a pilgrimage originating in this city. The original direction of the *qibla* was toward this city. A “Foundation Stone” in this city is said to cover up the Well of Souls. A person visited “the farthest (*) mosque” in this city while journeying on a horse-like creature called Buraq. Muhammad visited this city during the Night Journey. Before changing to face Mecca, Muslims used to pray toward the direction of this city. For 10 points, name this third-holiest city in Islam, the setting of the Dome of the Rock and the Temple Mount.

ANSWER: **Jerusalem** (or **al-Quds**)

<Suh, Religion>

5. This instrument plays an A-major theme in canon with the piano in the finale of a Cesar Franck sonata, and Debussy's G-minor sonata for it was his last work. Bazzini's "Le ronde de lutins" and Elgar's "Salut d'amour" are salon works for this instrument. Pieces for it supposedly by Pugnani and Tartini were actually written by Fritz Kreisler, who along with (*) Yehudi Menuhin played these instruments made by the Guarneri family. Beethoven's "Spring" and "Kreutzer" sonatas and Paganini's 24 caprices are for this instrument, a Stradivarius one of which is played by Itzhak Perlman. For 10 points, name this highest string instrument.

ANSWER: violin

<Yue, Music>

6. In a play from this country, a character complains about "cripples" entering the "How-to-Make-a-Mess-of-Life-Championships" before saying that "you can't fly kites on rainy days." In a novel from this country, a corpse is found on Mehring's 400-acre farm. Morris visits a pen-pal instead of Zacariah in a play from this country, the setting of a novel in which Daniel steals (*) Bamford's gun. The play *Blood Knot* is from this country, and a war in this country forces the Smales family to live with their black servant in *July's People*. For 10 points, Athol Fugard and Nadine Gordimer critiqued which country's policy of *apartheid*?

ANSWER: South Africa

<Yue, World Literature>

7. The current coach of this team defeated the Buffalo Bills in the Super Bowl using a defensive game plan now housed in the Pro Football Hall of Fame. That current coach of this team won two Super Bowl titles as a defensive coordinator under Bill Parcells. This team won a 2002 playoff game against the Oakland Raiders thanks to the (*) "tuck rule." David Tyree's "helmet catch" helped defeat this team that went undefeated in the 2007 regular season. This team scored 31 unanswered points to beat the Atlanta Falcons in Super Bowl LI ["fifty-one"]. For 10 points, Bill Belichick coaches what American football team whose longtime quarterback was Tom Brady?

ANSWER: New England Patriots (accept either or both underlined parts)

<Suh, Trash>

8. One scholar claimed "To ask questions about the life of [this man's lover] is to ask questions about half of humanity" due to a lack of information about her. This man's father Xanthippus returned from being ostracized to lead the victorious forces at the Battle of Mycale ["mye-KALL"], and this man gained power himself by ostracizing his rival Cimon ["SYE-mun"]. This lover of Aspasia commissioned (*) Phidias to rebuild the Parthenon and ordered citizens to stay behind the Long Walls. This man died from plague after giving a famous "Funeral Oration." For 10 points, name this "Golden Age" statesman who led Athens in the Peloponnesian War.

ANSWER: Pericles

<Suh, Ancient History>

9. The title character of a story by this author murders an antique dealer on Christmas, but turns himself in after being visited by an otherworldly being. In another story by this author, the title object is responsible for Napoleon and Captain Cook's success, and is resold to the protagonist to cure his leprosy. In that story, Keawe tries to sell the title (*) wish-granting object for less than he bought it. This author of "The Bottle Imp" wrote a novella in which Sir Danvers Carew is killed by one of the title characters, who transforms into the other by drinking a potion. For 10 points, name this author who created Dr. Jekyll and Mr. Hyde.

ANSWER: Robert Louis Stevenson [*Writer's note*: The first clue refers to the story "Markheim."]

<R. Li, British Literature>

10. In Arcadia, this deity was worshipped under the name Despoina. When Pirithous ["PEE-ruh-thiss"] tried to abduct this figure, either a group of coiling serpents or a sticky chair held him in place. Ascalaphus was pinned under a boulder and then turned into an owl for revealing information about this goddess, who was the younger of the two deities venerated in the (*) Eleusinian Mysteries. While picking flowers on the plains of Enna, this goddess disappeared when the earth opened up a chasm. Consuming pomegranate seeds forced, for 10 points, what daughter of Demeter to become Queen of the Dead after marrying Hades?

ANSWER: Persephone (or Kore)

<Duffy, Mythology>

11. He's not Faraday, but this scientist names an electromagnetic field's stress tensor. Formulas named for this man result from swapping partial derivatives in a thermodynamic quantity's second derivative. This man considered the changing electric field in a capacitor when he invented the concept of displacement current. This namesake of several thermodynamic (*) "relations" proposed a thought experiment regarding a violation of the second law of thermodynamics. This man corrected Ampère's law and included it in his four equations of electromagnetism. For 10 points, name this physicist who theorized a namesake "demon."

ANSWER: James Clerk Maxwell

<Yue, Physics>

12. One of these events at Kerak that Humphrey IV of Toron participated in probably saved his life from the forces of Saladin. One of these events planned at the 1570 Peace of Saint-Germain-en-Laye took place two years later during the French Wars of Religion. Margaret of Valois ["vahl-WAH"] participated in one of these events that was followed days later by a massacre that killed Gaspard de Coligny and thousands of other (*) Huguenots on St. Bartholomew's Day. Alliances created through these events increased the sphere of influence for the Hapsburgs. For 10 points, name these events, one of which united Isabella of Castile and Ferdinand of Aragon.

ANSWER: royal weddings (or royal marriages)

<Suh, European History>

13. The spelling of this object's name in one work's title puns on its depiction of a dark green "replica" of this object, upon which a black-robed acolyte stands. A work depicts a "Back View" of this object from "Dream Mountain." A triangular roof mimics the shape of this object, which is under a kite reading "longevity" in one depiction. This object is behind workers lugging bags of grain to a watermill and a man cleaning a hollow barrel. This object is bright red in (*) *Fine Wind, Clear Morning*, and it appears behind two boats in *The Great Wave off Kanagawa*. For 10 points, name this landmark, "36 views" of which were depicted by Hiroshige and Hokusai.

ANSWER: Mount Fuji

<R. Li, Painting>

14. It's not multiplication, but this operation is used to define an inner product on L^2 space. The error function is proportional to this operation on " e to the negative t -squared." This operation is applied to continuous PDFs to yield CDFs. This operation is defined for bounded functions on R^n if and only if their set of discontinuities has Lebesgue ["leh-BAY-g"] measure 0. Performing this operation on (*) $u dv$ yields $u v$ minus this operation on $v du$ when this operation is carried out "by parts." This operation can be approximated by the trapezoid rule or Riemann sums. For 10 points, name this operation, which along with differentiation comprises the two central operations in calculus.

ANSWER: integration (accept indefinite or definite integral, Lebesgue integral, or Riemann integral)

<R. Li, Math>

15. Alan Gerber and Donald Green conducted experiments on effective ways of encouraging people to perform this action. People perform this action differently than how they claimed they would in a phenomenon known as the Bradley effect. Condorcet names a paradox about this activity. If three or more choices exist, this action cannot satisfy all four of a set of criteria including (*) Pareto optimality, according to Arrow's impossibility theorem. The "tactical" type of this action may occur in "first-past-the-post" systems of interpreting the results of this action, in which the "winner takes all." For 10 points, name this action done to elect officials.

ANSWER: **voting** (accept **elections** or **electing** people until "elect")
<Suh, Sociology>

16. This president's Chief of Staff Sherman Adams was forced to resign for accepting a vicuña ["vuh-KOO-nyah"] overcoat as a gift. This man spoke of a "cross of iron" before listing peaceful alternatives to building a heavy bomber in his Chance for Peace speech. This man dispatched the 101st Airborne Division to force the hand of Orval Faubus and twice defeated (*) Adlai E. Stevenson. This man's experiences on the German autobahn inspired the creation of Interstate Highway System. This president warned of the influence of the military-industrial complex in his Farewell Address. For 10 points, name this successor of Harry Truman, a World War II general.

ANSWER: Dwight D. **Eisenhower** (prompt on **Ike**)
<Suh, American History>

17. This trait is more prevalent among the offspring of organisms that are in "good condition" according to the Trivers-Willard hypothesis. In humans, the protein TDF induces this condition by activating SOX9 ["socks-nine"], which in turn activates Anti-Müllerian ["anti-moo-LARE-ian"] hormone. The frequency of this trait in turtles decreases as (*) temperature increases. The most dominant clownfish in a school loses this trait. Humans with this trait are more susceptible to red-green colorblindness and other X-linked recessive conditions like pattern baldness. For 10 points, name this trait defined as the ability to produce sperm.

ANSWER: **maleness** (accept obvious equivalents like **being a man** or **guy** or **dude** after "humans")
<Duffy, Biology>

18. Despite the name, one of these places named "Capitol Reef" is not near an ocean. The largest of these places is named Wrangell-St. Elias. A *Georgetown Law Review* article suggests that an area inside one of these places could be the site of a "perfect crime," while another of these places has the largest living single-stem (*) tree in the world. One of these areas is named for deposits of petrified wood found in it. These places are featured on the "America the Beautiful" quarters. El Capitan and Old Faithful are popular features found in some of these places. For 10 points, name these places, examples of which include Yosemite ["yo-SEH-muh-tee"] and Yellowstone.

ANSWER: **national parks** (or **National Park** System; or **NPS**; prompt on just **parks**; do NOT accept or prompt on "state parks," "national preserves," or "national monuments")
<Suh, Geography>

19. It's not DC, but photographs taken in this city from a photographer's *X Portfolio* were featured in the exhibit *The Perfect Moment*, which was cancelled by the Corcoran Art Gallery for its explicit content. In a Richard Drew photograph, the vertical lines of a building in this city frame a man falling head first. Diane Arbus photographed a boy holding a toy grenade in one of this city's (*) parks. This city was photographed in the 1800s by Jacob Riis ["rees"] for his book *How the Other Half Lives*. Alfred Eisenstadt captured a sailor kissing a woman in a white dress in this city in a 1945 photograph. For 10 points, name this city, where *V-J Day in Times Square* was taken.

ANSWER: **New York** City (or **NYC**; accept specific boroughs)

<Yue, Photography>

20. The speaker of a poem in this collection is "wandering and confused" as he "bend[s]... over the shut eyes" of the title group. The speaker of another poem in this collection rhapsodizes about "the expression of a well-made man," asserts that "a man's body at auction" contains "the start... of rich republics," and declares "the (*) armies of those I love engirth me." "The Sleepers" is included in this collection, as is a poem whose speaker emits a "barbaric yawp over the roofs of the world" and "celebrate[s] [him]self." For 10 points, name this poetry collection containing "I Sing the Body Electric" and "Song of Myself," by Walt Whitman.

ANSWER: ***Leaves of Grass***

<R. Li, American Literature>

21. In a story by this author, villagers suspect that a church bell is bewitched because it rings at random times. This author wrote another story in which a young man is haunted by the title vampire-like creature after waving at a Brazilian ship. In a story by this man, the protagonist shares a picnic basket with her companions in a stagecoach. (*) Cornudet whistles *La Marseillaise* ["mar-say-YEHZ"] as a woman weeps at the end of that story. In another story by this author, Madame Forestier lets the protagonist borrow the title object to wear at a ball. For 10 points, name this French author of short stories like "Ball of Fat" and "The Necklace."

ANSWER: Guy de **Maupassant** [Editor's note: The first story is "Mademoiselle Fifi" and the second is "Le Horla."]

<Gioia/Suh, European Literature>

Bonuses

1. Karl Krause introduced this work to a thinker who immediately made it his regular nightly reading, saying that “it has been the solace of my life and will be the solace of my death.” For 10 points each:

[h] Name this work which influenced a thinker’s idea that only saintly self-denial and art can transcend “blind striving.” That man repeatedly wrote the phrase “Tat tvam asi” in his *magnum opus* in reference to this work.

ANSWER: the **Upanishads** (accept the *Chandogya Upanishad*)

[e] The aforementioned *magnum opus* is titled for *The World as [this concept] and Representation*. Nietzsche wrote of the “[this concept] to power,” and its “free” variety is often contrasted with determinism.

ANSWER: **will**

[m] This German pessimist wrote that there is only one thing-in-itself and that we live in the “worst of all possible worlds” in *The World as Will and Representation*.

ANSWER: Arthur **Schopenhauer**

<Yue, Philosophy>

2. *Description acceptable*. Fox News anchor Trish Regan first publicized this document via Twitter. For 10 points each:

[h] Name this document, whose recipient purportedly tossed it in the trash upon receiving. In this document, the author invokes Pastor Andrew Brunson’s detention and urges: “Don’t be a tough guy. Don’t be a fool!”

ANSWER: Donald **Trump**’s October 2019 **letter** to Recep Tayyip **Erdoğan** [“**ERD-oh-wan**”] (accept descriptive equivalents like **Trump**’s **letter** to the **President of Turkey**)

[e] President Trump sent that letter to President Erdoğan amid bipartisan criticism of his decision to withdraw American forces from this country. War criminal Bashar al-Assad governs from this country’s capital of Damascus.

ANSWER: **Syria**

[m] Turkey’s recent incursions into Syria have been aimed at curbing the influence of this ethnic group, whose YPG faction allied with the US to combat ISIL. This ethnic group’s PKK is deemed a terrorist group by the EU.

ANSWER: **Kurds**

<R. Li, Current Events>

3. Jonathan Brown claims that a painting of this city was created to convince Philip II to move his court back to this city, while the painting *Laocoon* depicts this city in the background. For 10 points each:

[m] Identify this Spanish city that was depicted in a painting titled for the *View of* it, which shows a stormy sky juxtaposed by green hills. One can see the Castle of San Servando on the left hand side of that painting of this city.

ANSWER: **Toledo** (accept *View of Toledo*)

[e] Toledo was the final home of the painter Doménikos Theotokópoulos, who was born in this modern-day country. Theotokópoulos painted the *Modena Triptych* in his early days spent on Crete in this country.

ANSWER: **Greece**

[h] Theotokópoulos, or El Greco, also painted this work, which shows the title character dressed in a striking red robe while his hands are tied by rope. In its bottom left, the Three Marys glance toward a man preparing a cross.

ANSWER: *The **Disrobing of Christ*** (or *El **Expolio***)

<Suh, Painting>

4. In a visionary collaboration with Kanye West, Lil Pump declares “your boyfriend is a dork” before invoking this character’s name. For 10 points each:

[h] Name this character, who an exasperated Michael Cera-played student likens to an “Irish R&B singer.” This “25-year-old Hawaiian organ donor” is the alter ego of Fogell in the 2007 comedy *Superbad*.

ANSWER: **McLovin**

[m] The aforementioned comedy, *Superbad*, featured this actress’ character Jules. This actress reunited with Jonah Hill in the Netflix miniseries *Maniac* and scored an Oscar for her portrayal of Mia Dolan in *La La Land*.

ANSWER: Emma **Stone**

[e] In *La La Land*, Mia aspires to make it big in this industry. Rick Dalton and his stuntman Cliff Booth struggle to maintain their relevance in this industry in Quentin Tarantino’s *Once Upon a Time... in Hollywood*.

ANSWER: **film** industry (accept equivalents such as **movie**, **cinema**, or **motion picture** industry; accept **Hollywood** before mention; accept **acting** or equivalents; prompt on **entertainment** industry)

<R. Li, Trash>

5. In a poem from the collection *The Darkening Ecliptic*, a poet with this unusual attribute asserts, “I am still / The black swan of trespass on alien waters.” For 10 points each:

[h] Name this unusual attribute possessed by the writer of “Durer: Innsbruck, 1945,” the poet Ern Malley. An Australian novelist was inspired by Malley to write the 2003 novel *My Life as a [person with this attribute]*.

ANSWER: the poet is **fictitious** (accept being a **fake**, **made up**, or other synonyms)

[m] This Australian novelist of *My Life as a Fake* depicted the life of outlaw Ned Kelly in *The True History of the Kelly Gang*. A title character floats a glass church to Bellingen in this writer’s novel *Oscar and Lucinda*.

ANSWER: Peter **Carey**

[e] The title character of Carey’s novel *Jack Maggs* was based off of Abel Magwitch, a character from a novel by this British author. That novel about the orphan Pip is titled *Great Expectations*.

ANSWER: Charles **Dickens**

<Yue, World Literature>

6. Ivalyo of Bulgaria wasn’t the only important “Cabbage” in European history. For 10 points each:

[m] This Roman republican statesman devoted two chapters of his *De Agricultura* to cabbage, which he claimed “surpasses all other vegetables.” He is better known for his persistent calls for the destruction of Carthage.

ANSWER: Marcus Porcius **Cato the Elder** (prompt on just **Cato**; or **Cato Major**, **Cato the Censor**, **Cato the Wise**, or **Cato the Ancient**; do NOT accept or prompt on “Cato the Younger” or “Cato Minor”)

[e] Pliny the Elder described seven varieties of cabbage, including one named for this city that was wiped out alongside Herculaneum by the eruption of Mount Vesuvius in AD 79.

ANSWER: **Pompeii**

[h] A later Roman cabbage enthusiast was this emperor, who retired to farm cabbages in AD 305. He defeated Carinus at the Battle of the Margus, and his Edict on Maximum Prices led to massive inflation.

ANSWER: **Diocletian** (or **Diocles** Valerius; or Gaius Aurelius Valerius **Diocletianus** Augustus)

<CGH, Ancient History>

7. For 10 points each, answer the following about friendships in operas.

[m] This composer wrote the opera *Don Carlos*, in which the title character swears eternal friendship in a duet with his friend Rodrigo, the Marquis of Posa, but Posa is later killed by the Inquisition. This man also wrote *Nabucco*.

ANSWER: Giuseppe **Verdi**

[h] Another notable duet of friendship between operatic characters appears in this Georges Bizet ["bee-ZAY"] opera that features the characters Nadir and Zurga. Unfortunately, both love a young priestess named Leila.

ANSWER: *Les pêcheurs de perles* (or *The Pearl Fishers*)

[e] Much of Puccini's *Tosca*, which features the two friends Mario Cavaradossi and Cesare Angelotti, is set in the Palazzo Farnese ["far-NEH-zeh"] and Castel Sant'Angelo of this capital of Italy.

ANSWER: **Rome**

<Suh, Opera>

8. For 10 points each, answer some questions about biofilms.

[e] The plaque that forms on these structures is a bacterial biofilm that feeds on free sugars. Regular brushing of these structures can keep plaque buildup under control and reduce decay.

ANSWER: **teeth** (accept word forms)

[h] It's not *Streptococcus*, but bacteria in this genus are commonly found in dental plaque. As its name suggests, this probiotic genus of bacteria ferments sugars to lactic acid, which may lead to cavity formation.

ANSWER: ***Lactobacillus***

[m] Biofilm bacteria are contrasted with unicellular bacteria in liquid media, which are described by this word. This word also refers to free floating microorganisms which serve as food for larger aquatic organisms.

ANSWER: **planktonic**

<K. Li, Biology>

9. A character realizes he has inherited this disease when a doctor warns him that "the sins of the fathers are visited upon the children." For 10 points each:

[h] Name this disease which afflicts a character that mumbles "the sun, the sun" after asking his mother to euthanize him. Another character with this disease is surprised when offered macaroons and has "tuberculosis of the spine."

ANSWER: **syphilis**

[m] The second aforementioned character, Dr. Rank, proclaims his love for this character, who awkwardly rebuffs his advances. This character is patronizingly referred to as "my little squirrel" by her husband Torvald.

ANSWER: **Nora Helmer** (accept either or both underlined parts)

[e] This Norwegian author created Oswald Alving and Nora Helmer in the plays *Ghosts* and *A Doll's House*, respectively.

ANSWER: Henrik **Ibsen**

<R. Li, European Literature>

10. This Egyptian warrior goddess was said to protect pharaohs and lead them into battle. For 10 points each:
[m] Name this goddess who was sometimes associated with Hathor and Bast. Her breath was said to have formed the desert.

ANSWER: **Sekhmet** (or **Sachmet** or **Sekhet**)

[e] Sekhmet was portrayed as one of these large cats, which were some of the fiercest predators in Egypt. The sphinx has the head of a human and the body of one of these animals.

ANSWER: **lioness**

[h] Ra once sent Sekhmet to destroy evil humans, but she got carried away and almost destroyed all of humanity. Ra finally pacified her bloodlust by giving her some of this substance.

ANSWER: red **beer** (prompt on **alcohol** or equivalents)

<Duffy, Mythology>

11. One ruler of this empire selected the so-called “Nine Jewels” to serve in his court. For 10 points each:

[m] Name this empire ruled by people like Aurangzeb.

ANSWER: **Mughal** Empire (or **Moghul** Empire)

[h] The Mughal Empire is considered to have been founded with a victory at this battle, where Babur crushed the forces of Ibrahim Lodi.

ANSWER: First Battle of **Panipat** (do NOT accept or prompt on “Second Battle of Panipat”)

[e] The most famous example of Mughal architecture is this white-domed mausoleum built by the emperor Shah Jahan. The mausoleum houses the tomb of both Shah Jahan and his wife Mumtaz.

ANSWER: **Taj Mahal**

<Suh, World History>

12. Pedro Arrupe, a leader of this organization, advocated taking a preferential option for the poor. For 10 points each:

[m] Name this religious order founded by Ignatius of Loyola. Ignatius’ personal motto of *ad maiorem Dei gloriam*, or “for the greater glory of God,” became this group’s motto.

ANSWER: **Society of Jesus** (or **Jesuits**; or **Societas Jesu**; prompt on **SJ**)

[e] This current pope is the first Jesuit to be elected pope. He was Archbishop of Buenos Aires before succeeding Benedict XVI as pope in 2013.

ANSWER: **Francis** (or Jorge Mario **Bergoglio**)

[h] The preferential option for the poor was central to this controversial movement in Latin America in the mid-20th century. It was established at the Medellín [**“meh-deh-YEEN”**] Conference and based on the writings of Gustavo Gutiérrez.

ANSWER: **liberation theology** (do NOT accept or prompt on “liberal theology”)

<Kao, Religion>

13. During pumping, the gain medium of these devices absorbs energy, and population inversion occurs in them. For 10 points each:

[m] Name these devices that output beams that are highly collimated near their “waist.”

ANSWER: **lasers**

[e] Spontaneous and stimulated emission in lasers can be described by this scientist’s A and B coefficients. His formula for mass–energy equivalence famously states that “ E equals $m c$ -squared.”

ANSWER: Albert **Einstein**

[h] Lasers are central to these devices commonly used in atomic physics to manipulate small particles. Arthur Ashkin won the 2018 Nobel Prize in Physics for developing these devices.

ANSWER: **optical tweezers** (or **optical traps**; or **single-beam gradient force traps**)

<Yue, Physics>

14. A legend claims that while this king was on the run, he took refuge in a peasant woman’s house but let her cakes burn under his watch to the woman’s great displeasure. For 10 points each:

[m] Name this early Anglo-Saxon king of Wessex whose rule was chronicled by the bishop Asser. This king translated Boethius’ *Consolation of Philosophy* and fought against the Viking leader Guthrum.

ANSWER: **Alfred** the Great

[h] The Treaty of Wedmore between Alfred and the Viking leader Guthrum created this territory for the defeated Guthrum. The name of this territory refers to the influence that the Vikings had over it.

ANSWER: **Danelaw**

[e] Around 886, Alfred occupied this city and started restoring it, a part of which was building fortifications on the south bank of the River Thames [“**tems**”].

ANSWER: **London**

<Suh, British History>

15. An A-major work for this ensemble with a second-movement *dumka* and a third-movement *furiant* is one of Antonin Dvořák’s most commonly performed chamber works. For 10 points each:

[m] Name this ensemble employed in another A-major chamber work which features variations on a *lied* titled “Die Forelle,” or “The Trout.” That work features a double bass instead of the now-standard second violin.

ANSWER: **piano quintet** (prompt on **quintet**)

[e] This composer of the *Trout Quintet* collected other *lieder* in song cycles like *Die schöne Müllerin* and *Winterreise*. His *lied* “Erlkönig” depicts the title creature menacing a child and his father in the forest.

ANSWER: Franz **Schubert**

[h] This composer’s landmark Piano Quintet in E-flat major set the standard of using a second violin instead of a double bass. His most famous *lieder* were based on poems by Heinrich Heine.

ANSWER: Robert **Schumann**

<Yue, Music>

16. This Winnemac city is where Elmer Gantry settles as a minister before becoming executive secretary of the National Association for the Purification of Art and the Press. For 10 points each:

[h] Name this fictional city, where the title character of another novel decides not to join the “Good Citizens’ League” after meeting the socialist Seneca Doane. Paul Riesling is jailed in this city for shooting his wife Zilla.

ANSWER: **Zenith**

[m] This generically named road titles another novel by the same author in which Carol Kennicott finds herself unhappy with small town life. That novel titled for this road is set in Gopher Prairie, Minnesota.

ANSWER: **Main Street**

[e] This American author of *Main Street* wrote about Zenith, Winnemac in his novels *Elmer Gantry* and *Babbitt*.

ANSWER: Sinclair **Lewis**

<Yue, American Literature>

17. Using the “Fibonacci” variety of these data structures gives amortized constant time for insertion and decrease-keys. For 10 points each:

[m] Name these data structures with “max” and “min” types. Its “binary” variety can be implemented with a binary tree with nodes ordered to satisfy this data structure’s namesake property.

ANSWER: **heap**

[e] A heap can be used to implement the “priority” variety of these data structures, which are often contrasted with stacks. These structures’ first-in, first-out behavior can be analogized to waiting in a long line.

ANSWER: **queue**

[h] Binary heaps feature this big-O runtime for delete, insert, and decrease-key operations. This big-O runtime is typical for operations on binary trees. Give your answer as a mathematical function of n .

ANSWER: big O of **$\log n$** (accept any answer involving the **logarithm of n**)

<Yue, Computer Science>

18. This man believed that the United States and Great Britain would merge together, saying “We are heading straight to the Re-United States.” For 10 points each:

[h] Name this author of the book *Triumphant Democracy* which argued that the American republican system was superior to the British monarchy. William Gladstone attacked this man’s essay titled “Wealth.”

ANSWER: Andrew **Carnegie**

[m] Carnegie opposed the annexation of this island nation and even offered \$20 million of his own money so that the people of this country could buy their freedom. Emilio Aguinaldo fought for this country’s independence.

ANSWER: the **Philippines**

[e] Carnegie’s secretary James Bertram oversaw Carnegie’s philanthropic efforts, including the building of many of these institutions across the country. One of these institutions “of Congress” houses more than 38 million books.

ANSWER: **library** (accept Carnegie **library**)

<Suh, American History>

19. This poem features many newly coined terms that are compounded with hyphens like “couple-colour,” “rose-moles,” and “fresh-firecoal chestnut-falls,” typical of its author’s style. For 10 points each:

[h] Name this “curtailed sonnet” which also features several prominent uses of alliteration in lines like “Landscape plotted and pieced – fold, fallow, and plough” and “With swift, slow; sweet, sour; adazzle, dim.”

ANSWER: “**Pied Beauty**”

[e] The author of “Pied Beauty,” Gerard Manley Hopkins, was initially strongly influenced by this poet before rejecting his aestheticism. This poet wrote that “Beauty is truth; truth beauty” in his poem “Ode on a Grecian Urn.”

ANSWER: John **Keats**

[m] Beauty also partly titles this Lord Byron poem, which describes a woman with “a heart whose love is innocent.” That woman performs the title action “like the night / Of cloudless climes and starry skies.”

ANSWER: “**She Walks in Beauty**”

<Yue, British Literature>

20. Because it can participate in this type of binding, ethylenediamine [“**ETH-il-eeen-DI-ah-meen**”] has a greater affinity for metals than methylamine [“**METH-il-ah-meen**”]. For 10 points each:

[h] Name this effect in which multiple atoms of a molecule coordinate to a metal center.

ANSWER: **chelate** effect (or **chelation**)

[m] Ethylenediamine is a bidentate type of these species which form coordination complexes when they bind to metals. These species are ordered in the spectrochemical series.

ANSWER: **ligands**

[e] Two tartrate ligands complex to this metal in Fehling’s solution, which is used to detect aldehydes. This reddish-orange metal turns green when oxidized and exposed to saltwater, as seen in the Statue of Liberty.

ANSWER: **copper** (accept **Cu**)

<K. Li, Chemistry>

21. Name these relatively secret groups active during the Revolutionary War. For 10 points each:

[e] The Culper Ring, active in New York City during the war, offered valuable information to this commander of the Continental Army and first president and may have thwarted an assassination attempt on his life.

ANSWER: George **Washington**

[h] This group of Continental Army officers attempted to remove Washington as their commander. The namesake of this group later resigned his military post and apologized to Washington, who never acknowledged it.

ANSWER: **Conway Cabal**

[m] Many of the Founding Fathers, including George Washington and Benjamin Franklin, were members of this fraternal organization. The death of William Morgan galvanized political opposition against this group.

ANSWER: Free**masonry** (or **Masonry**; accept Free**masons** or **Masons**)

<Suh, American History>