

1. **This man was targeted by Humphrey de Bohun in the Remonstrances after he attempted to annex Flanders. One person who opposed this man heroically defended Caernarfon Castle before being routed in Powys; that man was Llywelyn the Last. He issued a decree outlawing the charging of interest, followed fifteen years later by an Edict of Expulsion banishing all (*) Jews from England. This monarch was opposed by a man who was supported by Andrew Moray. As a result, this king's general, the Earl of Surrey, was crushed at Stirling Bridge. This man commanded the winning forces at the battle of Evesham against Simon de Montfort on behalf of his father, Henry II. For 10 points, identify this king who faced the revolt of William Wallace, a Plantagenet nicknamed "Longshanks".**

ANSWER: **Edward I** [prompt on "Edward"; prompt on "Hammer of the Scots"; accept **Edward Longshanks** before mention]

<Foster>

2. **Most knowledge of this work's premiere comes from the firsthand account of Friedrich Bonet. A plaintive oboe carries the melody in a movement of this work oddly marked "Adagio e staccato." Although there is no official order to its movements, they are generally grouped into three suites, the third of which is in G and is scored for strings, flutes, and continuo. Its most popular movements include the (*) "Bouree" and "Air" from its first suite and its second suite's "Alla Hornpipe." According to legend, it was composed to regain the favor of King George I. For 10 points, identify this set of pieces by G.F. Handel meant to be performed in barges on the Thames River.**

ANSWER: **Water Music**

<Rosenberg>

3. **Frank Jackson posited the idea of a super-scientist who knows everything about these entities without ever perceiving them in his "Mary's Room" experiment. Goodman's New Riddle of Induction posits a group of objects that change this property at a set time, blending their names together. The perception of these secondary qualities is a commonly-used example of qualia. A textbook example of falsifiability involves asking whether all swans have the same value for this property. In *Enquiry Concerning Human Understanding*, Hume uses one to show that ideas arise independent of experience by imagining a (*) missing one. For 10 points, name these qualities, which physicalists would say are simply expressions of the wavelength of light bouncing off an object.**

ANSWER: **colors** [accept more specific answers like **blue** or **green**]

<Mukherjee>

4. **This poet wrote of "Dark river-beds where the eternal thirst flows/ and weariness follows, and the infinite ache" and addressed a "white bee" that "[buzzes] in my soul, drunk with honey." Another work by this man includes sections like "Let the Woodcutter Awaken" and "The Flower of Punitaqui." W.S. Merwin translated a collection by this author that includes the poem "Ah Vastness of Pines". The final section of one of his poems begins (*) "Arise to birth with me, my brother", while the final poem of another of his collections opens by stating "Tonight I can write the saddest lines." For 10 points, name this Chilean who included "Heights of Macchu Picchu" in his *Canto General* and wrote *Twenty Love Poems and a Song of Despair*.**

ANSWER: Pablo **Neruda** [or Neftali Ricardo **Reyes** Basoalto]

<Kirsch>

5. Erdos' squarefree conjecture asks whether the central one of these numbers is always squarefree, and they are the subject of Vandermonde's convolution formula. The Catalan numbers can be defined using these numbers of indices $2n$ and n times one over n plus one. The hockey stick identity can be used to add them, and summing over their lower index from 0 to n gives two to the n th power. The entries of (*) Pascal's triangle are these, which arise when multiplying a two-term polynomial with itself. These numbers are symbolized by a column matrix with two entries, and they are equal to n factorial divided by r factorial times n minus r factorial. For 10 points, name these objects, which give the number of ways to select r objects from a group of n .

ANSWER: binomial coefficients [or n choose r or combinations or entries in Pascal's Triangle or equivalents before mention; do NOT accept "permutations"]

<Mukherjee>

6. This character creates a painting depicting an icy landscape dominated by a white head with a single eye and a pale halo. She is traumatized as a child by a visit from her uncle's ghost while she is locked in the Red Room. She identifies a man who disguises himself as a gypsy to tell Blanche Ingram's fortune while she is tutoring the illegitimate child of the opera singer Adele (*) Varens. After her friend Helen Burns dies of typhoid fever, she exposes the negligence of Mr. Brocklehurst, headmaster of Lowood School. She rejects her cousin John's marriage proposal before returning to the ruins of Thornfield Grange, which was burned by the owner's crazy first wife Bertha Mason. For 10 points, name this character who marries Mr. Rochester in a Charlotte Bronte novel.

ANSWER: Jane Eyre [prompt on "Eyre"]

<Gioia>

7. The Silent Sentinels agitated for this cause, which landed them in a workhouse. One group attempted to use the "New Departure" strategy to achieve this cause. *Leser v. Garnett* extended this right to the states. This cause was advocated by the "Golden Lane" demonstration at the 1916 Democratic National Convention in St. Louis. Two organizations that supported this cause were merged into the (*) NAWSA. A group of supporters of this cause had a convention in Akron, Ohio, during which Sojourner Truth gave a notable speech. Wyoming was the first state to grant this right. This cause was realized when Tennessee ratified the Nineteenth Amendment. For 10 points, name this cause, advocated by Elizabeth Cady Stanton and Susan B. Anthony.

ANSWER: Universal suffrage [accept Women's suffrage, accept things like passing the 19th amendment until mention; accept giving women the right to vote and equivalents; prompt on "Women's rights" or "feminism", as the clues are specific to the right to vote]

<Mukherjee>

8. One book by this thinker asserts that men delude themselves into thinking they are good when they are full of disordered desires. This man argued that immoral behavior was punishment from God and original sin resulted from Adam and Eve's pride and foolishness in his *Against the Pelagians*. This man denounced (*) Rome and Platonism in a work that claims the sinful society of men obscures the true kingdom of God, and his work served as the basis for Aquinas' formulation of just war. Another work by this author outlines his personal conversion from neo-Platonism and Manichaeism to Christianity. For 10 points, name this author of *City of God* and *Confessions*, a Doctor of the Church from Hippo.

ANSWER: Saint Augustine of Hippo

<Spencer>

9. Four lions decorate the throne of his *The Madonna in Her Chamber*, also called the *Lucca Madonna*. He collaborated with his older brother on a work where two kneeling patrons pray to grisaille representations of Saints John the Baptist and John the Evangelist. That same altarpiece by this artist depicts angels singing and playing an organ to flank a seated depiction of (*) God the Father in a meticulously painted red robe. In another of his paintings, an orange rests on a windowsill on the left and a richly decorated chandelier contains just one lit candle. This artist can be seen reflected in the convex mirror of that painting, and he also painted *Man in a Red Turban*. For 10 points, name this artist of *The Arnolfini Wedding*.

ANSWER: Jan van Eyck [or Johannes de Eyck]

<Bentley>

10. At the critical point, this equation predicts a compressibility of three-eighths. The critical exponents predicted by this equation are identical to those predicted by the Ising model, placing it in the universality class of mean field theories. It is derived using the hard-sphere potential. Around phase transitions, it incorrectly predicts oscillatory isotherms. This equation can be derived by truncating the virial expansion at two (*) terms. One constant in this equation accounts for the excluded volume of a particle, and another accounts for attractive forces. It adds two constants, a and b, to a less accurate law. For 10 points, name this improvement on the Ideal Gas Law, named for a Dutch physicist.

ANSWER: Van Der Waals equation

<Mukherjee>

11. The Four Rugby Boys emigrated from here to be educated in the UK. One expedition to this place was led by Francis Younghusband. The 29-article decree established an election system here in which names were drawn out of a golden urn. The Simla convention set its southern boundary at the MacMahon line. Camp Hale was a CIA site that trained several guerrillas from this region for a (*) 1959 uprising. Delegates from here signed the Seventeen-Point agreement after the Battle of Chamdo, which turned it into an “Autonomous Region.” Its government-in-exile is currently headquartered in India and is headed by Tenzin Gyatso. For 10 points, name this mountainous region administered by China and headed by the Dalai Lama.

ANSWER: Tibet [accept Xizang]

<Mukherjee>

12. A Nobel-prize winning author from this country provided the source material for the 1921 film *The Phantom Carriage*. A director from this country told of a boy who compared himself to Laika in *My Life as a Dog* and made *The Cider House Rules*. Another director from this nation captured a professor beset by dreams of his past life while traveling to receive an honorary degree in (*) *Wild Strawberries*. That same director made *Through a Glass Darkly* and *Fanny & Alexander*. One film from this country sees Jons accompany Block, a knight returning from the Crusades who plays a game of chess against Death. For 10 points, name this home to the director of *The Seventh Seal*, Ingmar Bergman.

ANSWER: Kingdom of Sweden [or Konungariket Sverige]

<Bentley>

13. Landmarks in this territory include a battery named for Charles O'Hara as well as Gorham's Cave, which may have been a last refuge for turtle-eating Neanderthals. August de la Motte's Hanoverian troops defended this place during a three-and-a-half year “Great Siege” that attempted to reverse the verdict of the Treaty of (*) Utrecht, which transferred control of this territory and Minorca. Europe's only wild population of barbary macaques is found in this territory, which was the northern of two features called the “Pillars of Hercules.” For 10 points, name this British territory located opposite Morocco across a namesake strait.

ANSWER: Gibraltar

<Hoppes>

14. Due to the similarity of this person's story and that of the Sumerian deity Tammuz, they were often syncretized. Women would plant flowers for eight days before the sun withered them away on plots of land known as this person's gardens. In one account of his birth, his father Cinyras fired an arrow at a myrrh tree which his mother (*) Myrrha transformed into, thus releasing him. A product of incest, this man was locked in a chest as an infant and given to Persephone, who lay claim to him for one-third of the year. The anemone was created from the blood of this man after he was killed by Ares in the disguise of a boar, despite his lover's admonition not to hunt wild beasts. For 10 points, name this lover of Aphrodite, a handsome youth.

ANSWER: Adonis

<Mukherjee>

15. In this novel's epilogue, a character dreams of a noseless executioner and of a visit from two men on a moonbeam. One character in this work insists on the title "Hegemon" and employs men like the spy Afranius and the soldier Mark the Ratkiller. Its twelfth chapter is set at the Variety Theater, where a shower of money and piles of expensive clothes are produced by Fagot, only to disappear later. It opens at Patriarch's Ponds, where the head of (*) MASSOLIT is beheaded by a streetcar. In an insane asylum, the poet Ivan Bezdomny meets this novel's first title character, who has written a manuscript about Yeshua ha-Notsri, or Jesus. For 10 points, identify this novel in which the Satanic figure Woland wreaks havoc in Moscow, a work by Mikhail Bulgakov.

ANSWER: *The Master and Margarita* [or *Master i Margarita*]

<Carson>

16. Mortensen used Search and Matching Theory to model one form of this phenomenon, while external expectations create multiple equilibrium points for it according to Peter Diamond's Coconut Model. The Shapiro-Stiglitz model implies that efficiency wages sustain this phenomenon, which is similarly maintained according to the NAIRU model developed by Phelps and Friedman. Okun's law posits the (*) inverse relationship between *this* and GDP, while the Beveridge Curve is particularly useful in modeling a type of this phenomenon created by mismatched conditions, its "frictional" form. The Phillips Curve plots inflation against, for 10 points, what economic phenomenon in which laborers are out of work?

ANSWER: unemployment [or equivalents like joblessness; do NOT accept more general answers like "poverty"]

<Ray>

17. One law governing these entities is derived by applying Bose-Einstein statistics to a photon gas in a cavity, and predicts an energy dependence proportional to the negative fifth power of wavelength. The cosmic microwave background approximates the continuous spectrum of these objects. Applying classical physics to one of these objects gives a law that states that their energy spectrum diverges to infinity at high frequency. A constant of 5.67 times 10 to the negative 8 relates the (*) emissivity of these objects to the fourth power of temperature. Planck's Law replaced that law named for Rayleigh and Jeans, and the Stefan-Boltzmann law also applies to them. For 10 points, identify these ideal objects which absorb all incident radiation.

ANSWER: black body

<Mukherjee>

18. **This ruler caused debasement by using captured dies to produce counterfeit Polish coins. He won a battle when his forces crossed the Striegau River to defeat the Duke of Saxe-Weissenfels' Saxons. He was also the victor at Leuthen as well as a battle in which Wilhelm von Seydlitz led this man's cavalry after he set a trap near Rossbach. This man, who refuted the claims of *The (*) Prince* in his *Anti-Machiavel*, fought three wars over the province of Silesia and saw his country saved when Russia settled with him following the death of Empress Elizabeth. One of the architects of the First Partition of Poland, for 10 points, name this son of Frederick William I, a Prussian King who brilliantly led his country in the Seven Years' War.**

ANSWER: **Frederick II** [or **Frederick the Great**; or **Frederick IV** of the Holy Roman Empire; prompt on "Frederick"]

<Greene>

19. **These proteins are antagonized by dam and dcm methylases, and the domain from one of these is fused to a zinc finger to generate targeted gene therapy constructs. Artificial plasmids have a polylinker site that is recognized by several different varieties of these proteins. They were originally discovered by Nathans, Smith, and Arber, and evolved in order to protect from viruses and foreign genomes. They are used to map polymorphisms in the (*) RFLP technique. They can produce either blunt or sticky ends depending on whether they leave an overhang, and must always recognize palindromic regions. Commonly used examples include HindIII ("hin-dee-three") and EcoRI ("eeco-r-one"). For 10 points, identify these enzymes that cleave DNA at specific sites.**

ANSWER: **restriction enzymes** [or **restriction endonucleases**; prompt on partial answer]

<Mukherjee>

20. **The title of one of this author's stories references an elderly rabbit created by Howard R. Garis. He also created a character who brings the Russian religious text *The Way of a Pilgrim* to a date with her college boyfriend Lane Coutell and faints after explaining the Jesus Prayer. He wrote of a man who wears a bathrobe so no one will stare at a tattoo he doesn't have; that man shoots himself while sitting next to his wife Muriel in "A (*) Perfect Day for Bananafish." His most famous creation, who used to date Sally Hayes, cares deeply for his little sister Phoebe but not at all for the phonys at Pencey Prep. For 10 points, name this author who created the Glass family and penned *Franny and Zooey* and *The Catcher in the Rye*.**

ANSWER: Jerome David **Salinger**

<Kirsch>

21. This poet de-romanticized Arthurian legend in his narrative poem *Merlin*. The speaker of one of this man's poems proclaims "Out of a grave I come to tell you this" and asserts "if you listen she will call" after describing how "the vines cling crimson on the wall". Another of his poems describes "Romance, now on the town, and Art, a vagrant" and tells of a character who "loved the (*) Medici, albeit he had never seen one". In addition to writing a poem whose title character is told "Go to the western gate" and a poem about a "child of scorn", this man penned a poem about a man who, despite being "richer than a king", went home one summer night and shot himself. For 10 points, name this poet of "Luke Havergal", "Miniver Cheevy", and "Richard Cory".

ANSWER: Edwin Arlington Robinson

<Carson>

22. This politician established the Kerner Commission and signed a bill that required "covered jurisdictions" to obtain pre-clearance from the Department of Justice before changing certain laws. This man stated that America has an "appetite for excellence" while signing the Public Broadcasting Act. A multi-volume biography titled after his (*) "years" is by Robert Caro. Robert Weaver became the first African-American cabinet member when this man appointed him Secretary of the newly-created Department of Housing and Urban Development. His administration passed the Economic Opportunity Act, which created the Job Corps and Head Start. For 10 points, landmark civil rights legislation was a part of the Great Society program of what president, who succeeded JFK?

ANSWER: Lyndon Baines Johnson [or LBJ; prompt on "Johnson"]

<Ueda>

23. This pathogen's genome forms four stem loops, known as the psi packaging signal. Raltregavir targets this organism's integrase, and it also produces the tat, rev, and vpr transactivators. Its coat is made from p24. Its genome encodes for a combined gag-pol protein that is cleaved into several proteins, and its env protein is cleaved into gp41 and gp120. This virus enters cells through the CCR5 and (*) CD4 receptors. Treatments for infection with it include protease inhibitors and Zidovudine, which is also known as AZT. This virus infects helper T-cells and its genome also encodes for a protein that creates DNA from its RNA genome, called reverse transcriptase. For 10 points, name this retrovirus which causes AIDS.

ANSWER: HIV [or Human Immunodeficiency Virus]

<Mukherjee>

24. James Welch wrote a book about "killing" this man, while his wife helped solidify his legacy in *Boots and Saddles*. In the Civil War, he commanded the 3rd Cavalry Division which pursued Robert E. Lee in the final days of the war. He was suspended from the army for going to Ft. Riley to visit to his wife, Elizabeth Bacon. An expedition led by this man found gold in the (*) Black Hills. In one battle, this man decided not to wait for Alfred Terry's troops. He destroyed the village of Chief Black Kettle and wrote *My Life on the Plains*. A horse named Comanche was the only survivor of his final battle, which was a victory for Crazy Horse and Sitting Bull. For 10 points, name this captain of the 7th Cavalry who made his "last stand" at Little Bighorn.

ANSWER: George Armstrong Custer

<Bentley>

1. One piece in this work opens with the cellos and basses playing an ascending minor scale to signify footsteps. For 10 points each:

[10] Identify this collection of incidental music which includes "Anitra's Dance," "Morning Mood," and "In the Hall of the Mountain King."

ANSWER: Peer Gynt

[10] This work by the composer of Peer Gynt consists of five movements based on 18th century dances and was written to celebrate the birth of the title playwright. It begins with a "Praeludium" and closes with a "Rigadoun."

ANSWER: Holberg Suite [or From Holberg's Time]

[10] Both *Peer Gynt* and the *Holberg Suite* were written by this Norwegian composer, who also composed a popular A minor piano concerto.

ANSWER: Edvard Grieg

<Rosenberg>

2. Mildly popular minor novels by this author include one about a plot to revive a mummy called *The Jewel of Seven Stars* and one about the evil Arabella March and her huge snake. For 10 points each:

[10] Identify this author of *The Lair of the White Worm*, doubtless more famous for a novel in which Lucy Westenra's death inspires Jonathan Harker and Mina Murray to help hunt down its title character.

ANSWER: Bram Stoker [or Abraham Stoker]

[10] Stoker's aforementioned most famous work is this horror novel about a certain Transylvanian vampire.

ANSWER: Dracula

[10] One of Dracula's subordinates is this patient of Dr. Seward, who is obsessed with eating larger and larger animals to obtain their "life force".

ANSWER: R.M. Renfield

<Carson>

3. The Hunter commission investigated one massacre that occurred in this city, which occurred after a general strike in response to the deportation of Satyapal and Kitchlew. For 10 points each:

[10] Identify this Indian city, whose Golden Temple was also attacked by the army in Operation Blue Star.

ANSWER: Amritsar

[10] Amritsar is located in this Indian State, which has a majority Sikh population.

ANSWER: Punjab

[10] The Amritsar Massacre was carried out by this British officer after the kidnapping of the teacher Marcella Sherwood. He was hailed as a hero upon his return to Britain.

ANSWER: Reginald Edward Harry Dyer

<Mukherjee>

4. For 10 points each, answer the following about recent archeological controversies.

[10] In November 2010, Yale University agreed to repatriate a large number of Incan artifacts to this country, where Yale archeologist Hiram Bingham made his most notable discovery in 1911.

ANSWER: **Peru**

[10] In April 2012, federal investigators impounded a statue due to be sold at Sotheby's on the grounds that it was looted from a temple in this country during the civil war that followed the overthrow of Prince Norodom Sihanouk in 1970.

ANSWER: **Cambodia**

[10] This publicity-craving former Minister of State for Antiquities Affairs in Egypt, who also starred in The History Channel's series *Chasing Mummies*, was briefly jailed in April 2011 on charges of corruption.

ANSWER: Zahi **Hawass** ("huh-WAAS")

<Haddad-Fonda>

5. These objects were stolen by a half-bird, half-man demon named Zu. For 10 points each:

[10] Name these legal documents that were retrieved by Marduk after he slew Tiamat.

ANSWER: **Tablets** of **Destiny** [or **Tablets** of **Destinies**; or **Dup Shimati**]

[10] The Tablets of Destiny were inscribed with characters from this pictographic writing system originally developed in Sumer. Had the Tablets been real, a blunt reed could have been used as a stylus to carve out characters from this system.

ANSWER: **cuneiform** script

[10] Zu was slain by Ninurta, the son of this chief god of the Mesopotamian pantheon, who once tried to kill off humanity with a flood.

ANSWER: **Enlil** [or **Ellil**]

<Gupta>

6. [Note to moderator: Read part 3 slowly]

For a convex lens, the reciprocal of this value is equal to one over the object distance plus one over the image distance. For 10 points each:

[10] Name this value, symbolized f , which for a spherical mirror or lens is equal to half the radius of curvature.

ANSWER: **focal length**

[10] For a spherical lens, light of different wavelengths bend differently, meaning different colors have different focal lengths. That leads to this type of image distortion.

ANSWER: **chromatic aberration** [prompt on "aberration"; prompt on "dispersion"]

[10] Consider a convex lens. Name the location, i.e. which side of the lens, and what type of image is produced if the object is placed nearer to the lens than the focal length.

ANSWER: **virtual** and **same** side [equivalents for "same side" ok, both answers required, DO NOT prompt on partial answer]

<Mukherjee>

7. Its shrine was carved by Nikolaus Hagenauer and one figure depicted in this work is thought to be suffering from ergotism. For 10 points each:

[10] Identify this altarpiece by Matthias Grunewald which depicts an especially sickly crucifixion.

ANSWER: **Isenheim** Altarpiece

[10] Several scenes in the *Isenheim Altarpiece* depict this Saint, who can be seen meeting Paul in one of the wings on the interior part of the shrine. Monsters appear in the scene showing the temptation and torment of this saint from Egypt.

ANSWER: Saint **Anthony** the Great [or Saint **Antony** or Saint **Anthony** the Abbot or Saint **Anthony** of Egypt or Saint **Anthony** of the Desert or Saint **Anthony** the Anchorite or Saint **Anthony** Antonius; prompt on "Father of All Monks"]

[10] This much more serene altarpiece features a right panel where Joseph can be seen working with his carpentry tools. The Holy Ghost literally flies in from a window in its center panel, and many scholars attribute this work to Robert Campin.

ANSWER: **Merode** Altarpiece

<Bentley>

8. Characters in this novel include a former Eschaton star named Michael Pemulis and a punter for the Arizona Cardinals named Orin. For 10 points each:

[10] Identify this 1996 novel set during Hal Incandenza's time at the Enfield Tennis Academy. It centers on a search for a copy of the titular fatally entertaining film.

ANSWER: **Infinite Jest**

[10] This subject of David Lipsky's biography *Although Of Course You End Up Becoming Yourself* wrote *Infinite Jest* and the collection *Girl With Curious Hair*, among other things, before hanging himself in 2008.

ANSWER: David Foster **Wallace**

[10] This author, a close friend of Wallace, analyzed the state of modern literature in the essay "Why Bother?" and wrote the National Book Award-winning 2001 novel *The Corrections*.

ANSWER: Jonathan Earl **Franzen**

<Carson>

9. Waxy cuticles are responsible for cutting back on this process. For 10 points each:

[10] Name this process, which is the loss of water from plants through their stomata.

ANSWER: **transpiration**

[10] Transpiration is responsible for pulling water up this plant vascular tissue, which consists of trachieds and vessel elements. In addition to transporting water, it transports minerals.

ANSWER: **xylem**

[10] Xylem arises from one type of this undifferentiated, pluripotent plant tissue. It transforms into procambium and vascular cambium, and the apical variety of this tissue remains indeterminate.

ANSWER: **meristem**

<Mukherjee>

10. France and Great Britain were drawn into this war after the Ottoman Empire's crushing defeat at Sinope. For 10 points each:

[10] Name this war in which those three nations defeated Russia to maintain Ottoman control over a namesake peninsula. This war featured a siege of Sevastopol and the Battle of Balaclava.

ANSWER: **Crimean** War

[10] Russia's czar during the Crimean War, Nicholas I, described the Ottoman Empire's decrepit condition by referring to it by this phrase.

ANSWER: "**sick man** of Europe"

[10] An early source of tension was Napoleon III's decision to dispatch the Charlemagne to the Black Sea in violation of this 1841 agreement that closed the Bosphorus and Dardanelles to all warships.

ANSWER: **London Straits** Convention

<Kothari>

11. One work originally created by this sculptor shows Athena holding a spear and looking down towards a nude Marsyas. For 10 points each:

[10] Identify this ancient Greek sculptor. A copy of his best known work now resides at the Baths of Diocletian and shows a nude figure prominently bending his knees and back while holding the title object in his right hand.

ANSWER: **Myron**

[10] Myron is best known for his sculpture of a man throwing one of these objects. Throwing these objects—which are not javelins—was part of the ancient Olympics.

ANSWER: A **Discus**

[10] Nearby the Roman version of the *Discus Thrower* is a bearded statue of this god, who is sometimes misidentified as being Sardanapalus. This god is depicted as an infant resting on the arm of Hermes in a sculpture by Praxiteles.

ANSWER: **Dionysus** [or **Bacchus**]

<Bentley>

12. One member of this family falls ill due to a life of prostitution and beer-brewing she adopted after moving to Johannesburg from their home village of Ndotsheni. For 10 points each:

[10] Identify this family which, in addition to the aforementioned Gertrude, includes the carpenter John and the reverend Stephen, who also travels to Johannesburg in an attempt to find his son Absalom.

ANSWER: the **Kumalo** family

[10] The Kumalo family appears in *Cry, the Beloved Country*, the most famous novel by this South African author of *Ah, But Your Land is Beautiful*.

ANSWER: Alan Stewart **Paton**

[10] A letter from this clergyman at the Mission House in Sophiatown prompts Stephen Kumalo to come to Johannesburg. While in the city, this man serves as Stephen's guide.

ANSWER: **Theophilus Msimangu** [accept either underlined portion]

<Carson>

13. For 10 points each, answer the following about fictional cities in sociology.

[10] Both "Eastern City" from William Foote Whyte's *Street Corner Society* and Lloyd Warner's "Yankee City" were pseudonyms for cities in this state, where Talcott Parsons taught sociology at Harvard.

ANSWER: Massachusetts

[10] Muncie, Indiana was the real town on which this title city of a 1929 "Study in Modern American Culture" was based. The authors of that study, Robert and Helen Lynd, revisited it "In Transition" during the Great Depression.

ANSWER: Middletown

[10] This author of *Human Accomplishment* analyzed the fictional cities of Belmont and Fishtown in his 2012 book on "White America," *Coming Apart*. He is best known for his controversial collaboration with Richard Herrnstein, *The Bell Curve*.

ANSWER: Charles A. Murray

<Wynne>

14. The first of these objects was constructed under Djoser and was supposedly designed by Imhotep. For 10 points each:

[10] Identify these massive tombs, examples of which include a "great" one at Giza.

ANSWER: Egyptian Pyramids

[10] This pharaoh of the fourth dynasty went pyramid-crazy, constructing the Medium, Red and Bent Pyramids.

ANSWER: Sneferu [or Snephru or Snefru or Snofru or Soris]

[10] Sir Leonard Woolley excavated the Great Ziggurat of this ancient city, located in modern day Iraq. A law code was issued by this city's ruler, Nammu.

ANSWER: Ur [or Urim or Uru; do not accept "Uruk"]

<Bentley>

15. Guru Nanak taught that this action was not required of Sikhs, stating that God's name was the true destination. For 10 points each:

[10] Name this activity which involves undergoing a journey to a place of spiritual or religious significance.

ANSWER: pilgrimage

[10] In medieval times, the "Way of St. James" was traversed by many pilgrims and terminated at this cathedral in Northern Spain.

ANSWER: Cathedral of Santiago de Compostela [or Catedral de Santiago de Compostela; accept "of" instead of "de"; prompt on partial answer]

[10] This city by the banks of the Ganges in Uttar Pradesh is probably the oldest in India and is a pilgrimage site for Hindus, Jains, and Buddhists.

ANSWER: Varanasi [or Benares]

<Gupta>

16. One method of performing this operation involves simply switching adjacent elements if they are out of order, and is called the “bubble” variety. For 10 points each:

[10] Identify this common algorithmic operation, which involves taking a list that is out of order and putting it in order. There are “quick”, “insertion”, and “bogo” algorithms for performing this operation.

ANSWER: sorting

[10] This type of recursive sort involves dividing a list into two approximate halves recursively and combining the two sorted sub-lists into one big sorted list.

ANSWER: merge sort

[10] Mergesort, quicksort, and heapsort all have a best case runtime and average case runtime of big O of this function.

ANSWER: $n \log n$

<Mukherjee>

17. This war began after the battleship *Maine* was sunk in Havana harbor. For 10 points each,

[10] Name this war, fought in 1898 in Cuba and the Philippines.

ANSWER: Spanish-American War

[10] The Spanish navy was decisively defeated at the Battle of Manila Bay by forces under this American commodore. He gave the order “You may fire when ready, Gridley.”

ANSWER: Commodore George Dewey

[10] The Rough Riders under Theodore Roosevelt are famous for their assault on San Juan Hill. However, the primary hill they assaulted was this one, part of the San Juan Heights.

ANSWER: Kettle Hill

<Bentley>

18. Sulfur hexafluoride adopts this molecular geometry, which is susceptible to the one axis lengthening due to degeneracy in the Jahn-Teller effect. For 10 points each:

[10] Identify this molecular geometry which is adopted by atoms that have six ligands surrounding one central atom with no lone pairs.

ANSWER: octahedral

[10] The octahedral configuration contains bonding electrons in these orbitals, which can hold 10 electrons total. Transition metals have electrons in these orbitals.

ANSWER: d orbitals

[10] This theory predicts that ligands in octahedral complexes split d orbitals into two groups, e sub g and t sub 2g. It is very accurate in predicting the color of octahedral complexes as transitions between those groups.

ANSWER: crystal field theory [or CFT; accept ligand field theory or LFT]

<Mukherjee>

19. In the first act of this play, Lulu brings a box containing a toy drum to a boardinghouse owned by Meg and Petey Boles. For 10 points each:

[10] Identify this play which ends with Goldberg and McCann taking away the pianist Stanley Webber the morning after the titular celebration.

ANSWER: *The **Birthday Party***

[10] This British playwright, a proponent of the "comedy of menace", penned *The Birthday Party* and *The Caretaker*. The hitmen Ben and Gus receive unusual orders from the title contraption in his play *The Dumb Waiter*.

ANSWER: Harold **Pinter**

[10] Pinter was inspired by his affair with Joan Bakewell to write this play, in which nine scenes in reverse chronological order follow Jerry's affair with his best friend's wife Emma from its end to its beginning.

ANSWER: ***Betrayal***

<Gioia>

20. After this man described his theory that all animals operate with clock-like mechanisms, his student replied that she had never seen a watch give birth to baby watches. For 10 points each:

[10] This mathematician and tutor to Sweden's Princess Christina wrote *Discourse on Method*, which contains the actual quote "I think, therefore I am".

ANSWER: Rene **Descartes** [or Renatus **Cartesius**]

[10] This six-part work by Descartes tries to call all assumptions into doubt by proposing a "malicious demon" that makes all possible sensory input deceptive.

ANSWER: ***Meditations on First Philosophy*** [or ***Meditationes de prima philosophia***; prompt "Meditations"]

[10] In an example in the Second Meditation, Descartes argues that the mind alone perceives the essence of this specific substance to be clear and distinct, despite that all of its physical attributes can totally change.

ANSWER: a piece of **wax**

<Jackson>

21. Name these locations found in John Bunyan's *The Pilgrim's Progress*, for 10 points each.

[10] Christian's companion Faithful is burned alive in this city, where they are arrested for refusing to buy any of the local goods. This location provides the title of a William Makepeace Thackeray novel about Amelia Sedley and Becky Sharp.

ANSWER: **Vanity Fair**

[10] Christian is attacked by Apollyon in the Valley of Humiliation, after which he passes into this other valley. Its name was inspired by Psalm 23, whose speaker fears no evil while walking through it.

ANSWER: the Valley of the **Shadow of Death**

[10] A figure named Help aids Christian in escaping from this swamp, where he had been trapped due to the weight of the the bundle of sins on his back.

ANSWER: the **Slough of Despond**

<Gioia>

22. This man was elected king of Poland after defeating a Turkish army at the Battle of Chocim. For 10 points each:

[10] Name this Polish king who led a coalition to relieve a siege by Kara Mustafa in 1683.

ANSWER: Jan III **Sobieski** [or **John III** of Poland; prompt on "Jan" or "John"]

[10] Sobieski relieved this Austrian city, which was earlier defended by Count Niklas von Salm-Reifferscheidt and Wilhelm von Rugendorf, against the besieging army of Suleiman the Magnificent.

ANSWER: **Vienna**

[10] In 1699, this treaty ended the war between the Ottomans and the Holy League, during which Eugene of Savoy won the Battle of Zenta. It forced the Ottomans to give up Transylvania to Austria.

ANSWER: Treaty of **Karlowitz**

<Bollinger>

23. The Trouton-Noble and Michelson-Morley experiments both presaged the development of this theory. For 10 points each:

[10] Name this theory advanced by Einstein in 1905, the second postulate of which states that the speed of light is a constant in all inertial reference frames.

ANSWER: **special relativity** [or **SR**; do NOT accept "general relativity" or "GR"; prompt on partial answer]

[10] This phenomenon refers to the slowing of clocks moving at relativistic speeds. It can be calculated using the Lorentz transform and it gives rise to the twin paradox.

ANSWER: **time dilation**

[10] In special relativity, the Lorentz transformations include rotations, and with translations forms the Poincare (pwan-KUH-ray) group. This is the name given to a Lorentz transformation with no rotation.

ANSWER: Lorentz **boost**

<Neithalath>