

1. A dirge in this play concludes that "golden lads and girls all must, like chimney-sweepers, come to dust." A prince in this play has a woman awoken with an aubade about a lark that sings "at heaven's gate." Another character in this play wakes up with a prophetic tablet on his chest after seeing his father Sicilius in a dream. In this play, Cornelius foils a plot by substituting a sleeping potion for real poison. The Italian villain of this play steals a bracelet and identifies a mole on the protagonist's breast to prove her infidelity. Thus, in this play, Iachimo wins a bet with Postumus by pretending to have slept with Imogen. For 10 points, name this late Shakespeare play titled for a king of ancient Britain.

ANSWER: Cymbeline

2. This ruler was the last to employ architect Domenico da Cortona, who worked in the Loire valley to build the Chateau of Chambord to this ruler's specifications. This European ruler's navy besieged the city of Nice at the same time as the pasha Hayreddin Barbarossa. An anti-Catholic notice was covertly placed outside this man's bedchamber in the Affair of the Placards. This man met with an English monarch at a lavish meeting organized by Cardinal Wolsey, the Field of the Cloth of Gold. This man was captured at Pavia after his alliance with Suleiman the Magnificent brought the Ottoman Empire into western European politics. For 10 points, name this Valois king of France, a rival of Charles V of Spain who patronized Leonardo da Vinci.

ANSWER: Francis I Valois [or Francois I; prompt on Francis]

3. A generalization of this quantity that applies to liquid media is also named for Nikolay Umov. When computing the divergence of the Maxwell stress tensor, this quantity appears divided by the square of the speed of light and represents the momentum density. The original derivation of this quantity relies on taking the time derivative of the energy density and then using a theorem named for the namesake of this quantity, which causes the negative divergence of this quantity to appear. This quantity is found by taking the cross product of the E-field and the H-field. For 10 points, name this vector quantity symbolized with a boldface S, which represents the flux of electromagnetic energy, and "points" in the direction of propagation.

ANSWER: Poynting vector [prompt on "intensity"]

4. Every August since 1947, this European city has held the oldest multi-week "Festival Fringe" for theater productions, founded in competition with its International Festival. Its tourist attractions include a vertically-oriented Camera Obscura, which projects images of it down onto a white table; that attraction and its Grassmarket area are along its Royal Mile in Old Town. The port area of Leith is in this city, where the historic Holyrood Palace is visible from a parliament building. The Waverley railway station lets passengers off in this city in the Midlothian region, the largest on the southern coast of the Firth of Forth. For 10 points, name this major Scottish city east of Glasgow.

ANSWER: Edinburgh, Scotland

5. This man's son studied the Salem witch trials in his book *Wayward Puritans*. This thinker, who developed some of his ideas while observing schools on the Pine Ridge reservation, wrote a study of a man who once shouted "I am not!" during a choir practice in a monastery. He contrasted such themes as "industry" and "inferiority" and "identity" and "role confusion" in a model he developed. This psychologist analyzed the lives of important religious men in *Gandhi's Truth* and *Young Man Luther*. His most well-known theory was outlined in his book *Childhood and Society*. For 10 points, name this psychologist who advanced an eight stage theory of psychosocial development.

ANSWER: Erik Erikson

6. Jean Metzinger created a divisionist rendition of a painting of this woman, whose artist exasperatedly replied "Black, obviously," upon being asked about her dress. This woman holds a fan in her gloved arm and sits on a blue chair in that controversial painting, which was bought by Leo and Gertrude Stein. This woman often alternated modeling duty with her husband's daughter Marguerite. This woman's black hair is done in a bun in a painting in which her face is bifurcated by the title feature. A portrait of this woman was singled out for attack at the 1905 Salon d'Automne by critics who likened it to a wild beast. For 10 points, name this subject of *Woman with a Hat* and *Green Stripe*, which were painted by her husband, the leader of the Fauvists.

ANSWER: Amelie Matisse [or Mrs. Matisse; or Henri Matisse's wife; or Amelie Noellie Parayre; prompt on Matisse]

7. A condition in which this organ undergoes severe fibrosis commonly occurs in chemotherapy patients taking Busulfan or Bleomycin. One disease that affects this organ causes Ranke and Ghon complexes to appear in it, and also causes caseating necrosis of this organ via granuloma formation. V/Q scans are commonly used to evaluate the function of this organ. A cancer of this organ's neuroendocrine cells sometimes causes the syndrome of inappropriate ADH secretion and increased ACTH levels, and was formerly called oat cell carcinoma. Diseases of this organ are commonly sorted by their FEV1 to FVC ratio into either restrictive or obstructive, and hyaline membranes appear in this organ in infants who do not produce enough surfactant. For 10 points, name this organ which contains a series of tiny sacs called alveoli.

ANSWER: lungs

8. A poem by this author describes two characters who talk "as kinsmen met at night" until the moss reaches their lips. This author wrote of the notched pencil of a dead friend in one poem, and described an "onset" when the "King be witnessed - in the Room" in another. This poet wrote, "I signed away what portion of me be assignable" and described how "then the Windows failed" in another poem. One of this author's poems mentions "a House that seemed a swelling in the Ground" and a "School, where Children strove at recess." In that poem of hers, the speaker remembers the day "I first surmised the Horses' heads were toward Eternity." For 10 points, name this author of "I heard a Fly buzz - when I died" and "Because I could not stop for Death."

ANSWER: Emily Dickinson

9. This character predicts that "a time will come when luxury dissolves into the atmosphere like a perfume." This character ignores two warnings to "watch your step," joyful that "at last the weather's warming up." This character notes that "I don't daydream and don't look back" after being given a model elephant by glass factory workers. While watching a performance, she rushes onstage to help a peasant girl seemingly being whipped to death. While at the Summer Palace, this character sings the aria "This is prophetic." This non-coloratura soprano attends a performance of the opera *The Red Detachment of Women* alongside Chiang Ch'ing, the wife of Mao Zedong. For 10 points, name this John Adams character, a First Lady who visits China.
ANSWER: **Pat** Nixon [or **Thelma**; or **Mrs. Nixon**; prompt on **Nixon**]

10. A monarch of this name, on the cusp of being unseated, amassed troops in Pomerania in response to a threatened Danish invasion of the free city of Hamburg. That monarch of this name liked making cannon-firing noises while playing with his toy soldiers, which he did instead of having sex with his wife. Another king of this name wiggled himself out of an arranged marriage by forcing Eudoxia to become a nun, and later ordered his army to quell the rebellion of Kondraty Bulavin. That more famous king of this name studied shipbuilding on his Grand Embassy to Europe and organized the Table of Ranks to undermine the authority of the boyars. The third king of this name was the manchild husband of Catherine the Great. For 10 points, identify this regnal name of a "great" modernizer of Russia.
ANSWER: **Peter** [or **Pyotr**]

11. One member of this group avenges the death of his father and returns wearing his father's armor, hence his nickname meaning "badly-fitting coat." Another member of this group makes a lion into his pet by saving it from a snake. This group was first mentioned in the *Roman de Brut* penned by Wace. Prior to becoming a member of this group, a lowly kitchen boy received the nickname "Good Hands," or "Beaumains." A vacant spot among this group, Siege Perilous, is filled by a youthful bastard child who begins the Grail Quest. For 10 points, name this group, all of whose members supposedly had equal status, that hung out at King Arthur's Court.
ANSWER: Knights of the **Round Table** [prompt on answers like King **Arthur's Court** or King **Arthur's knights** before the very end]

12. In a speech, this politician claimed that "self-reliance and teamwork are not opposing virtues; we must have both." This man quoted Ronald Reagan by saying "there they go again" in a speech outlining Republican waste and budget slashing. He was mocked for giving an overly long nomination speech for Michael Dukakis at the 1988 Democratic National Convention. He proclaimed "the era of big government is over" in a State of the Union speech, and he cheerfully proclaimed "we're going to keep President Obama on the job" during a well received 2012 Democratic National Convention speech. For 10 points, name this man who defeated George H.W. Bush to win the 1992 presidential election.
ANSWER: William Jefferson "Bill" **Clinton** [or William Jefferson **Blythe** III]

13. The British Channel 4 documentary *Hunted* is set in this country. Kris van der Veen and three other Dutch tourists were arrested in this country in July 2013 for violating Article 6.13.1. The Principle 6 campaign specifically targeted a law passed by this country. This country threatened to pull out of Eurovision after Conchita Wurst's recent victory. The mostly-defunct political party Yabloko is a protest voice in this country. This nation's president requested that visitors, "leave the children in peace, please" in January 2014. Weeks later, a mayor in this country explained that there were no homosexual inhabitants of his city. For 10 points, name this country which passed an "anti-gay" law in 2013 in the lead-up to the Winter Olympics it hosted in Sochi.

ANSWER: **Russian** Federation

14. This composer parodied "polite salon music" with an interlude for solo viola and piano in one of his symphonies, which calls for a "distant choir" of strings in its fourth movement. Optional parts for the flute and viola appear in a piano sonata by this composer, which was published immediately after the explanatory "Essays Before a Sonata." In another piece by him, increasingly dissonant woodwinds represent "Fighting Answerers" struggling in vain against a solo trumpet. Writers such as the Alcotts, Thoreau, and Emerson title the movements of this composer's *Concord Sonata*. Another of his pieces pays homage to Robert Gould Shaw and his black regiment. For 10 points, name this composer of *The Unanswered Question* and *Three Places in New England*.

ANSWER: Charles **Ives**

15. This law predicts the effectiveness of separating components using air stripping. The temperature dependence of a parameter in this equation follows a van't Hoff-like expression using the heat of solvation. The Gibbs-Duhem equation is used when the Lewis-Randall rule and this law are both invalid. It is used when the critical temperature is below the system temperature. This law's namesake constant is the ratio between fugacity and mole fraction as mole fraction goes to zero, and has units of pressure. This law applies best for ideal-dilute solutions, such as oxygen dissolving in water, and sets partial pressure proportional to the concentration in the liquid. For 10 points, name this equation, the low-concentration analog of Raoult's Law.

ANSWER: **Henry's** Law

16. This author wrote an essay in which he describes a toilet as "a place of spiritual repose," which compared Western civilization to his own homeland. In one of this author's novels, the main character is financially ruined when he falls in love with a waitress who reminds him of the actress Mary Pickford. That novel of his about Joji is entitled *Naomi*. In another of this author's novels, a character "goes to Suma" whenever she engages in an affair. That novel of his features the marital problems of Misako and Kaname. He wrote another novel including four siblings in which Yukiko repeatedly fails to get married. For 10 points, name this Japanese author of *Some Prefer Nettles* and *The Makioka Sisters*.

ANSWER: Jun'ichiro **Tanizaki**

17. This is the most commonly used system in which there are no cyclic numbers. Vim is distributed with xxd so it can work with files in this system. The smallest unit of this system is equivalent to a "nibble". The printf format "percent a" prints a floating-point number in this system. This system is identifiable by the prefix zero x. Eight groups of four numbers in this system are used to represent an IPv6 address. A "dump" in this system is commonly assessed when debugging. Because each digit in this system maps to four bits, it is more readable than, and very easy to convert to and from, binary. This system uses the digits 0 through 9 and A through F. For 10 points, name this base 16 numeral system.

ANSWER: hexadecimal [or base 16 until it is read]

18. This author wrote a story in which Alexandra feverishly declares love for her doctor, Trifon, rather than die without loving anyone. This author of "Asya" lectured on the tension between solipsism and foolish altruism represented by "Hamlet and Don Quixote." In a novel by this writer, the protagonist shoots Pavel in the leg in a duel arising from a kiss he gave to Fenechka. That medical student created by this author dies from a scalpel cut he neglects to disinfect. A short story collection by this author containing "Khor and Khalinych" and "Bezhin Lea" contributed to the movement to abolish serfdom. For 10 points, name this Russian author of *Sportsman's Sketches* and *Fathers and Sons*.

ANSWER: Ivan Turgenev

19. The "dede" is the spiritual leader of a religion mostly based in this country. Jews were disproportionately targeted by the 1942 "Wealth Tax" in this country. The "National Vision" religious organization has a great deal of pull among the Islamic diaspora from this country. This modern-day country is the primary home of the Alevi sect, and it was also the country to which Baha'ullah was exiled. Bartholomew I heads a major religion in this country. Hospitals and other workplaces in this country forbid women from wearing headscarves. For 10 points, name this officially secular, majority Muslim country, whose capital contains the former Hagia Sophia.

ANSWER: Republic of Turkey [or Turkiye Cumhuriyeti]

20. After this battle, John Ashley Kilvert, a future mayor, was found half frozen but alive in a ditch. In reporting for the *Times*, William Russell wrote seeing a colorful "streak tipped with a line of steel," inspiring a nickname for one phase of it. At one point in this battle, Louis Nolan vaguely waved his arm while saying "There is your enemy!" to Lord Lucan. During it, Sir Colin Campbell's 93rd Highland Regiment repelled an enemy attack in the "Thin Red Line" defense. The best known phase of this battle occurred when Lord Raglan sent troops into a location defended by Pavel Liprandi called the Valley of Death, resulting in numerous British casualties at the hands of Russian guns. For 10 points, name this battle in the Crimean War that featured the ill-fated "Charge of the Light Brigade."

ANSWER: Battle of Balaclava

21. One of these events in Honea Path, South Carolina resulted in eight deaths due to the actions of Governor Blackwood's "constables without compensation." Fielding Burke's novel *Call Home to the Heart* and Grace Lumpkin's *To Make My Bread* were based on one of these in 1929 that took place in Gastonia, North Carolina and resulted in the death of that city's chief of police. David Dubinsky led some events of this type as the head of the ILGWU. In 1912, a large event of this type was named for Lawrence, Massachusetts. One of these events ended following the Triangle Shirtwaist disaster. For 10 points, name these types of work stoppages conducted by employees engaged in the production of cloths and clothing.

ANSWER: **textile strikes** [accept reasonable equivalents such as **garment strikes** and **textile work stoppages**; prompt on **strikes**]

22. This property can be measured by adding potassium permanganate in the Baeyer test, or by adding bromine in methylene chloride for the bromine test. This non-molecular weight property increases in order for the following compounds: myristoleic, linoleic, and arachidonic acid. This property can be quantified by adding half the number of nitrogens, subtracting half the number of halogens and hydrogens, adding the number of carbons and 1. This property can be reduced by hydrogenation, and it corresponds to the number of double bonds there are. For 10 points, name this property possessed by trans, and other much healthier fats.

ANSWER: degree of **unsaturation** [or index of **hydrogen deficiency**; **rings** plus **double**/triple **bonds**; or word forms; do not accept or prompt on "saturation"]

23. One character in this novel mutters about the "power of a thousand scorpions" before dying. This novel includes a lengthy description of monstrous figures on a church door shortly before a hairless man who speaks in a bizarre mix of languages is introduced. The main character of this novel enjoys chewing a narcotic herb and has a pair of "lenses" stolen from him. This novel's narrator has sex with a prostitute on the floor of a kitchen and is upset when that girl is taken away by an inquisitor. In this novel, several characters are found with blackened fingers after touching a poisonous book by Aristotle. For 10 points, name this novel featuring Adso of Melk and William of Baskerville, a murder mystery set in an abbey by Umberto Eco.

ANSWER: *The **Name of the Rose*** [or *Il **nome della rosa***]

1. Answer the following about matrices, for 10 points each.

[10] A square matrix with ones on the diagonal and zeros elsewhere is this special matrix, which is required to yield the same matrix by which it is multiplied.

ANSWER: **identity** matrix [or **I**]

[10] Linearly independent systems of equations can be solved using matrices if the matrix is put in this form, where every leading coefficient is a one and is the only nonzero entry in its column.

ANSWER: **reduced row echelon** form [or **RREF**]

[10] This matrix contains the second partial derivatives of a function and can be used to check if a function has a saddle point at a certain point.

ANSWER: **Hessian** matrix

2. These places feature weekly "Theocratic Ministry School" meetings. For 10 points each:

[10] Name these religious institutions which feature no religious symbols. Their name was coined by Joseph Rutherford, the president of the Watch Tower Society.

ANSWER: **Kingdom Hall** [prompt on Jehovah's Witnesses's **church**]

[10] Kingdom Halls are where members of this Christian denomination meet. Members of this faith reject the Trinity and military service and are best known for going door to door to distribute *The Watchtower*.

ANSWER: **Jehovah's Witnesses**

[10] This term refers to the act of expelling unrepentant sinners or heretics. After it is performed on people, they are "shunned" by other Jehovah's Witnesses.

ANSWER: **disfellowshipping**

3. Along with Manet's *Luncheon on the Grass*, this painting was the highlight of the 1863 Salon des Refuses. For 10 points each:

[10] Identify this portrait of the artist's mistress Joanna Hiffernan, who stands on a wolf skin holding a lily in front of a curtain that matches the color of her dress. You can also name the series of which it is the first entry.

ANSWER: *The* **White Girl** [or **Symphony in White, No. 1**]

[10] In his *Ten O'Clock Lecture*, this American artist explained his fondness for choosing colorful musical titles for his paintings, such as *Symphony in White* and *Nocturne in Black and Gold*.

ANSWER: James Abbott McNeill **Whistler**

[10] After a buyer withdrew his offer for Whistler's *Rose and Silver: The Princess from the Land of Porcelain* upon seeing the artist's gigantic signature, Whistler began to sign his paintings with a monogram of this kind of animal.

ANSWER: **butterfly**

4. Answer these questions about the history of the Black Sea, for 10 points each.

[10] This Italian home city of Andrea Doria and Christopher Columbus established the colony of Caffa on the Black Sea during its long trade war with Venice.

ANSWER: **Genoa** [or **Genova**; or **Zena**]

[10] In ancient times, this name was given to the non-Hellenic region due west of the Black Sea and north of Thessaly. Spartacus was one of many slaves traded from here.

ANSWER: **Thrace** [or **Thracia**; or **Thraike**]

[10] This town near the Black Sea was the site of a 1440s crusade and battle at which King Ulaszlo of Hungary and Poland was killed and the Turks forced John Hunyadi's army to flee.

ANSWER: **Varna**

5. This language's alphabet consists of 31 letters, although "Q," "W," and "Y" are only used in foreign words. For 10 points each:

[10] Name this language that has both an s-comma and t-comma, and which changed its alphabet in 1860. Its "Daco" form is standard.

ANSWER: **Romanian** [or **Romana**]

[10] The Romanian alphabet switched to a Latin alphabet from this other kind of alphabet in 1860.

ANSWER: **Cyrillic** alphabet

[10] Romanian is one of these Italic languages of the Indo-European family; other members of this group of Latin-derived languages include French and Italian.

ANSWER: **Romance** languages

6. In a novel by Cesar Aira, a member of this profession wears a black veil during an Indian raid after becoming disfigured in a lightning strike. For 10 points each:

[10] Identify this profession of a man who stabs Maria Iribarne to death in Ernesto Sabato's *The Tunnel*.

ANSWER: **painter** [or **artist**; or obvious equivalents]

[10] This other Latin American author wrote about the painter Paul Gauguin in *The Way to Paradise*. He also satirized Peruvian politics in *Conversation in the Cathedral* and wrote *Aunt Julia and the Scriptwriter*.

ANSWER: Mario **Vargas Llosa**

[10] This writer featured the romance between a sculptor and an art critic in *The Buenos Aires Affair* but is better known for a novel in which Molina retells movies like *Cat People* to his cellmate.

ANSWER: Manuel **Puig**

7. This city is the site of the Ben Ezra Synagogue, which stores a collection of over 200,000 manuscripts. For 10 points each:

[10] Name this world capital, also home to the mosque of Muhammad Ali.

ANSWER: Cairo

[10] This gathering place, whose name means "liberation," is a center of public life in downtown Cairo and was the locus of the successful protests against the Egyptian government in 2011.

ANSWER: Tahrir Square

[10] This millenium-old university in Cairo is a leader in both Islamic jurisprudence and the study of Arabic-language literature.

ANSWER: Al-Azhar University

8. This story's basic premise involves a long family feud between Georg and Ulrich's clans. For 10 points each:

[10] Name this short story which ends with the two men trapped under a tree branch, prompting them to end the feud. Unfortunately for them, they are about to be eaten by wolves, who turn out to be the title figures.

ANSWER: "The Interlopers"

[10] "The Interlopers" was written by this British short story author, whose other works with twist endings include "The Open Window" and "Sredni Vashtar."

ANSWER: Saki [or Hector Hugh Munro]

[10] Framton Nuttel freaks out and runs at the end of "The Open Window" after being told stories by a mischievous young girl. The story's famous closing line says that this concept "at short notice was her specialty."

ANSWER: romance [do not accept any other answers]

9. Name some third parties in U.S. presidential elections, for 10 points each.

[10] In the 1996 and 2000 elections, this party garnered significant amounts of votes and attention when Ralph Nader ran for the office.

ANSWER: Green Party of the United States

[10] This party may be best known for running candidates such as Eugene V. Debs and Norman Thomas. Much of its support came from labor unions and progressives.

ANSWER: Socialist Party of America

[10] This party was mostly composed of farmers, who opposed the Resumption Act's attempt to return to hard money. Its candidates included Peter Cooper and, in 1880, James Weaver.

ANSWER: Greenback Labor Party [or National Party; or Independent Party]

10. A Cassegrain reflector is commonly used in one type of these devices, which need to correct for Siedel aberrations. For 10 points each:

[10] Name these devices, whose optical varieties include the refracting and reflecting types.

ANSWER: telescope

[10] Very Long Baseline Interferometry is often used on telescopic arrays that read signals in this band, which was used by Jansky to find a source at Sagittarius A. A signal of this type called LGM-1 was found to be from a pulsar.

ANSWER: radio

[10] This set of methods developed by Horace Babcock can be used to remove atmospheric distortion and aberrations in telescopes. These methods include tilt-tip correction and the use of MEMS mirrors.

ANSWER: adaptive optic

11. One writer proposed that sweet-smelling trees be planted around this city to combat odors in his 1661 tract *Fumifugium*. For ten points each:

[10] Identify this city that experienced the Great Stink in 1858.

ANSWER: London

[10] During the Great Stink, many scientists proposed that the fumes caused this disease, even though John Snow had proven this intestinal infection to be waterborne while studying the Broad Street outbreak four years earlier.

ANSWER: cholera

[10] Although the London sewers were renovated by Joseph Bazalgette after the Stink, this sanitation advocate and reformer of the Poor Laws had been proposing modernization of the system for several decades.

ANSWER: Edwin Chadwick

12. This character's younger self is represented by photographs of his actor from the film *Reflections in a Golden Eye*. For 10 points each:

[10] Name this brilliant West Point graduate played by Marlon Brando in a 1979 film. He goes insane, forms a cult at a Cambodian temple, and is eventually "terminated with extreme prejudice" by Captain Willard.

ANSWER: Colonel Kurtz [or Walter]

[10] Kurtz is an antagonist in this Francis Ford Coppola film set in the Vietnam War, an adaptation of *Heart of Darkness*.

ANSWER: Apocalypse Now

[10] Give the profession of the nameless character played by Dennis Hopper, who seems insane and tells Willard that Kurtz is a genius, calling him "a poet-warrior in the classic sense." He uses the word "man" a lot.

ANSWER: American photojournalist [or photographer; or journalist; or equivalent answers such as reporter]

13. The title character of this novel becomes the wrestling coach at Steering School, and his father was a brain-damaged soldier. For 10 points each:

[10] Name this novel about the title writer, the son of Jenny Fields, who herself writes the autobiography *A Sexual Suspect* and is shot at a political rally.

ANSWER: *The World According to Garp*

[10] *The World According to Garp* is a novel by what American author who also wrote *A Prayer for Owen Meany* and *The Hotel New Hampshire*.

ANSWER: John Irving [or John Wallace Blunt, Jr.]

[10] In this John Irving novel, Wilbur Larch performs abortions at the St. Cloud's orphanage and is known as St. Larch. He is also the surrogate father of Homer Wells, who eventually takes over St. Cloud's as Dr. Fuzzy Stone.

ANSWER: *The Cider House Rules*

14. This man gave the speech "The Self-Assertion of the German University" after being named the rector of the University of Freiburg. For 10 points each:

[10] Name this philosopher who introduced the idea of *Dasein* to reflect personhood in *Being and Time*.

ANSWER: Martin Heidegger

[10] Heidegger controversially became a member of the Nazi Party in 1933; his student Hannah Arendt wrote about the trial of another Nazi three decades later in this book.

ANSWER: *Eichmann in Jerusalem*

[10] Arendt's *The Origins of Totalitarianism* is divided into three sections, culminating in "totalitarianism," which is shown to evolve from anti-Semitism and this subject of the middle section of the book.

ANSWER: imperialism

15. This leader freed the hektemeroi by instituting a "shaking-off of debts." For 10 points each:

[10] Name this leader who wrote a new law-code to replace a harsher one written by Draco.

ANSWER: Solon

[10] This friend of Solon led the hyperakrioi and ruled Athens as a tyrant for 33 years; he was succeeded by his sons Hippias and Hipparchus.

ANSWER: Peisistratos

[10] These two men became known as the "tyrannicides" for killing Hipparchus and beginning the restoration of Athenian democracy.

ANSWER: Harmodius and Aristogeiton [either order, but don't accept or prompt on just one]

16. This man fulfills a prophecy by throwing a discus, which goes off course and kills his grandfather Acrisius. For 10 points each:

[10] Name this Greek hero who kills the Gorgon Medusa.

ANSWER: Perseus

[10] Perseus agrees to bring back the head of Medusa because he cannot gift Polydectes one of these animals. King Laomedon promised immortal ones as a gift to Heracles.

ANSWER: horses

[10] In a myth parallel to the Andromeda story, King Laomedon tried to appease Poseidon by exposing this Trojan princess to be eaten by a sea monster.

ANSWER: Hesione

17. An example of these genes is BRAF, which is activated by a V600E mutation and inhibited by vemurafenib. For 10 points each:

[10] Identify these genes like Ras and src, which when mutated or activated at a high level, cause cancer. They're conceived of as the opposite of tumor suppressor genes.

ANSWER: proto-**oncogenes** [or **oncoproteins**]

[10] BRAF inhibitors have recently been approved to treat the metastatic form of this skin cancer, which often begin as asymmetric, darkly-colored blobs.

ANSWER: **melanoma**

[10] Another important oncogene is this fusion protein generated by the Philadelphia chromosome. It is inhibited by the drug imatinib.

ANSWER: **bcr-abl** tyrosine kinase

18. This quantity is equal to the enthalpy minus the entropy times temperature. For 10 points each:

[10] Name this quantity whose change is less than zero for a spontaneous reaction.

ANSWER: **Gibbs** free energy [or delta **G**]

[10] The equilibrium constant for a reaction is equal to the negative exponential of the Gibbs free energy at standard state divided by this two term constant.

ANSWER: **temperature** times universal **gas constant** [or **RT**; or obvious equivalents, such as **temperature** times **R**]

[10] Gibbs derived this statistical ensemble used to describe a system in contact with a heat bath, but not a particle bath.

ANSWER: **canonical** ensemble [do not accept "grand canonical ensemble" or "microcanonical ensemble" or other wrong answers]

19. A five-note rising motif played by the cellos follows its opening in 5/8 rhythm, which evokes Charon rowing on the river Styx. For 10 points each:

[10] Name this symphonic poem that quotes the *Dies irae* as the oarsman approaches the subject of an Arnold Böcklin painting.

ANSWER: *The* **Isle of the Dead**

[10] This morose late Romantic Russian composer produced *The Isle of the Dead*, as well as *The Bells* and *Rhapsody on a Theme of Paganini*.

ANSWER: Sergei Vasilievich **Rachmaninoff**

[10] This D-minor orchestral composition by Rachmaninoff, whose first movement cadenza exists in two versions, was played by Van Cliburn to thunderous applause at the inaugural International Tchaikovsky Competition in 1958.

ANSWER: **Piano Concerto No. 3 in D minor** [or **third piano concerto**; prompt on **piano concerto**]

20. In a critical study on this author "and his World," Russian literary theorist Mikhail Bakhtin developed the concept of the "grotesque." For 10 points each:

[10] Name this early French author who often ventured into crude humor in his tales of the giants Gargantua and Pantagruel.

ANSWER: Francois **Rabelais**

[10] Upon arriving in Paris for his education, Gargantua climbs Notre Dame and performs this action, which kills many people below.

ANSWER: **urinates** on the crowd below [or obvious equivalents; prompt on **flooding the city** or similar answers]

[10] In the third book, Pantagruel and Panurge set sail in search of this person, whose wisdom can determine whether Panurge ought to marry or not.

ANSWER: the **Oracle** of the **Holy Bottle** [or the **Oracle** of **Bacbuc**]

21. In one of this play's two endings, the female journalist Feletti is handcuffed to a window in a room where a bomb is about to go off. For 10 points each:

[10] Name this play in which The Maniac foils the efforts of police inspector Bertozzo. It was inspired by the real-life story of Giuseppe Pinelli.

ANSWER: **Accidental Death of an Anarchist** [or **Morte accidentale di un anarchico**]

[10] The Maniac form Dario Fo's *Accidental Death of an Anarchist* resembles the clowns from this late Renaissance form of Italian comic theater. Its stock character Arlecchino is the basis for our word "harlequin."

ANSWER: **commedia dell'arte**

[10] *Accidental Death of an Anarchist* is in this genre of fast-paced, madcap comedy which often features scenes where characters chase each other through many doors. Michael Frayn's *Noises Off* parodies this genre.

ANSWER: **farce**