

Tossups

1. In a short story by this author, Ivan wanders away from a funeral and listens to the gossiping of the recently deceased until his sneeze silences them. A critical analysis of this author introduced the idea of the unfinalizability of the self and argued that his prose exemplifies polyphony. This author of “Bobok” is not François Rabelais, but Mikhail Bakhtin wrote a book about the problems of his poetics. One of his protagonists rooms with Ganya Ivolgin and discovers Nastassya Filippovna’s murder at the hands of Rogozhin. Another of his protagonists decides he is an “extraordinary man,” prompting him to axe-murder a pawnbroker. For 10 points, name this Russian who created Prince Myshkin and Raskolnikov in *The Idiot* and *Crime and Punishment*.

ANSWER: Fyodor Mikhailovich Dostoyevsky

2. John Koch pioneered beam theory to model stresses on this bone. Scarpa’s triangle, which is shaped like a sail bounded by the inguinal ligament and the adductor longus, is sometimes named for this structure. It is the more proximal of the two bones rotated laterally by the popliteus muscle. Its posterior surface contains the pectineal line, which ends at the linea aspera. The upper extremity of this bone contains two trochanters as well as a head which articulates with the acetabulum. The lateral and medial heads of the gastrocnemius attach to the corresponding condyles of this bone, which are found at its lower extremity behind the patella, where it articulates with the tibia. For 10 points, identify this strongest and longest bone of the human body, found in the thigh.

ANSWER: the human femur

3. The Dumnonian king Geraint was defeated by this kingdom’s ruler Ine. Judith of Flanders, the daughter of Charles the Bald, was twice named a queen, rather than king’s wife, in this kingdom. Old Sarum was captured by its second king Cynric, who was the son or grandson of this kingdom’s founder Cerdic. The monk Asser served as a biographer to another of its rulers, who ordered the construction of a series of fortified towns called burhs and defeated Guthrum at the Battle of Edington, thus ending a Danish invasion of this kingdom. That king issued the Doom Book and personally translated *The Consolation of Philosophy* and other works into English. For 10 points, identify this Saxon kingdom that eventually unified England under the descendants of its greatest ruler, Alfred the Great.

ANSWER: Kingdom of Wessex [accept Kingdom of West Saxons before “Saxon” is read and prompt after]

4. In July 2013, this team signed the brother of Falcons receiver Harry Douglas. At the 2014 trade deadline, the Lakers traded for an Old Dominion grad on this team’s roster who stitched “499” to his shoe in honor of his ESPN player ranking. The playoff record of 29 points scored by one player in one quarter was set by this team’s then-point guard Sleepy Floyd. They played several games at their former home, the Cow Palace, during the 1975 Finals, in which they swept the Bullets under coach Al Attles. Latrell Sprewell choked P.J. Carlesimo while both were employed by this team, whose high-scoring late-80s and early-90s offense was led by the “Run TMC” trio. This team’s recent offseason acquisitions include Jermaine O’Neal and Andre Iguodala. For 10 points, name this Mark Jackson-coached NBA team, currently led by Klay Thompson and Steph Curry.

ANSWER: the Golden State Warriors [accept either underlined portion; accept the San Francisco Warriors]

5. A 1947 explosion at the O’Connor Electro-Plating Company left a 22-foot crater in this city; the aftermath of that event was broadcast by its first television station, W6XYZ. This city’s police chief Clemence Horrall was replaced by former Marine William Parker in the wake of a scandal involving the madam Brenda Allen. Wartime rationing of wool and the Sleepy Lagoon murder led to racial conflict in this city, whose *Herald Express* and *Examiner* newspapers nicknamed murder victim Elizabeth Short the “Black Dahlia.” Naval servicemen and gangs of pachucos clashed in the Zoot Suit Riots in this city, which erupted into riots in 1992 after the acquittal of police officers who were taped beating Rodney King. For 10 points, name this California city, the location of Hollywood.

ANSWER: Los Angeles [or L.A.]

6. One of this artist’s paintings features background architecture very similar to the *Mass of the Dead* from the *Turin-Milan Hours*, lending credence to the theory that he is that work’s anonymous “Hand G.” The landscape of Autun can be seen in the background of a painting by this man in which an angel holds an elaborate crown over the

head of the Virgin, who extends her child toward the namesake bureaucrat. This artist of *Madonna in the Church* also depicted the Madonna with Canon van der Paele and with Chancellor Rolin. *The Just Judges* is the missing lower-left panel of a polyptych whose central panel features a ring of angels surrounding the Lamb of God, a collaboration between this artist and his brother Hubert. For 10 points, name this painter of the *Ghent Altarpiece*.
ANSWER: Jan van Eyck [or Johannes de Eyck]

7. These beings live in a city illuminated by jewels, whose entrance is surrounded by anthills. One of these beings sacrificed himself to turn the tide of a war and gets a one-day marriage to the dazzling goddess Mohini in return. That one, Iravan, was the son of Arjuna and a princess of these characters named Ulupi. These inhabitants of Patala are the offspring of Kadru, who enslaved her sister Vinata. They include Vasuki and their leader is the massive sage Shesha, on whom Vishnu often rests. A ruse preventing these beings from drinking *amrta*, the nectar of immortality, began their lifelong enmity with Garuda the eagle. For 10 points, name these rain-controlling, reptilian demigods of Indian mythology.

ANSWER: nagas [or nagadevas; prompt on "snakes" or "serpents" or "cobras;" accept nagi or nagini]

8. This man is the first namesake of a theorem whose proof uses the fact that momentum and the vector potential classically commute. That theorem, which forbids a nonzero thermal average for the magnetization in a classical system, is also named for van Leeuwen. One quantity named for him multiplies the Lande *g* factor and the total angular momentum over \hbar to give the negative total magnetic moment of an electron. Another quantity named for him equals " \hbar divided by (electron mass times *c* times α)" and thus exceeds the Compton wavelength by a factor of α . That length scale appears in a physical model named for this man that was the first to reproduce the Paschen and Lyman series. Electrons have discrete, stable circular orbits in the atomic model named, for 10 points, for what Danish physicist?

ANSWER: Niels (Henrik David) Bohr

9. Some performances of this opera eliminate the traditional massive gong strikes near the end of the trio "Oh! Di qual sei tu vittima." One of its characters entreats God to protect her in the aria "Sgombra è la sacra selva." This opera's protagonist sings "Teneri, teneri figli" while holding a dagger and contemplating murdering her children in their sleep, and later remits responsibility for those children to Oroveso. One of its characters expresses his love for the handmaid Adalgisa in the aria "Meco all'altar di Venere," while another cuts mistletoe while praying to a moon goddess in its most famous aria, "Casta Diva." At this opera's end, the Roman proconsul Pollione joins the title character on a funeral pyre. For 10 points, name this Vincenzo Bellini opera about a Druid priestess.

ANSWER: Norma

10. A much-disputed passage in this poem describes one of the central characters being given "seven thousand" of some indeterminate thing, possibly hides of land. In this poem, "no trembling, no tuned timber, no tumbling hawk" and "no swift horse" are among the absences lamented by the "last survivor," whose lay is sometimes thought of as this poem's "fourth funeral." Two women in this poem serve in the role of "peace-weavers." Its protagonist is accused of losing a swimming contest to Breca. Its protagonist uses a sword made by giants to kill a descendant of Cain at the bottom of a lake and tears off a monster's arm while defending Hrothgar's mead-hall Heorot. For 10 points, name this Old English epic about the slayer of Grendel.

ANSWER: Beowulf

11. One section of this text divides ideas into "innate," "adventitious," and "factitious" types. Early in its final section, the author notes that he cannot imagine the individual sides of a thousand-sided "chiliagon" as easily as he can three sides of a triangle. Its second section, meant to be read a day after its first, describes a faculty called the "natural light" and establishes the "clear and distinct" test. This work asserts that perception "by the intellect alone", rather than any physical properties, allows one to identify a piece of wax. The first section of this text hypothesizes a "malicious demon" that deceives all senses, prompting the author to methodically doubt everything but himself. For 10 points, name this six-part book which condenses ideas from the earlier *Discourse on Method*, by Rene Descartes.
ANSWER: Meditations on First Philosophy [or Méditations Métaphysiques; or Meditationes de prima philosophia, in qua Dei existentia et animæ immortalitas demonstratur; accept René Descartes's Meditations]

12. These structures are implemented on x86 architectures using the SP and SS registers. To prevent attacks that "smash" them, some implementations insert a "canary" value adjacent to a pointer to one end. One type of this

structure is composed of a number of "frames," each of which stores information about a given subroutine. Unlike finite state machines, PDAs incorporate one of these structures. One of them is used to evaluate arithmetic expressions in the language Forth, which uses reverse Polish notation. In languages that don't implement tail calls, infinite recursion results in one of these structures "overflowing." Things are added to and removed from these structures at one end using operations called "push" and "pop." For 10 points, name these last-in, first-out data structures.

ANSWER: stacks [or call stacks; or execution stacks; or control stacks; accept stack frames]

13. A general for this dynasty annihilated enemy forces at the Battle of Buyur Nor but failed to capture Togus Temur. It saw the first development of the an hua technique at such places as Jingdezhen. By letting enemy forces go around the Great Wall, the general Wu Sangui betrayed this dynasty. The founder of this dynasty defeated a navy under the rival leader Chen Youliang at the Battle of Lake Poyang. This dynasty fell after the rebel Li Zicheng sacked its capital, which led Emperor Chongzhen to commit suicide. The first ruler of this dynasty, the Hongwu Emperor, took power during the collapse of the preceding Yuan dynasty. For 10 points, name this Chinese dynasty succeeded in the seventeenth century by the Qing dynasty and famous for its innovations in ceramics.

ANSWER: Ming Dynasty

14. Aspects of this concept were classed as "historical" and "para-historical" by Ninian Smart, who included a "narrative dimension" and "material dimension" among his seven dimensions of this concept. Clifford Geertz claimed that it clothed its conceptions of order with "an aura of factuality" in an article about it "as a cultural system." Robert Bellah discussed the "civil" variety of this concept in America. Karl Marx defined it as the "sigh of the oppressed creature." Its primary purpose was identified as the emotional unification of society by Emile Durkheim, while James George Frazer claimed it was the stage between magic and science. Durkheim wrote about the "Elementary Forms" of, for 10 points, which type of "Life", a concept exemplified by Islam or Christianity?

ANSWER: religion [accept word forms; accept "civil religion" or "civic religion" or "American religion" or "religious life"]

15. One of this man's novels begins each of its four chapters with a poem from the perspective of the woman the chapter is named after. That novel includes one subplot in which townspeople try to get a sandbar removed and another in which the conservative political boss Ramiro Bastos stifles attempts at progress. He created a flute-playing pharmacist whose lack of passion drives his wife to summon the ghost of her dead former husband. This novelist used his hometown of Ilheus as the setting for a novel in which the Syrian bar owner Nacib Saad employs the title skilled cook. Another of his protagonists marries Teodoro after Vadinho dies while dancing the samba. For 10 points, name this Brazilian modernist who wrote *Gabriela, Clove and Cinnamon* and *Dona Flor and Her Two Husbands*.

ANSWER: Jorge Leal Amado de Faria

16. This sect's descendants defended its theology in the 1298 book *Marganitha* and in the *Book of Union* by Babai the Great. Barsumas established a school for this belief in Nisibis after the Edessa school was closed. Its founder was taught by Theodore of Mopsuestia. John of Antioch recanted his support for this doctrine in the Formula of Reunion, and twelve anathemas against its founder were issued at a council called by Theodosius II. A pre-Jesuit missionary named Alopen brought this belief system to western China. This sect called the Virgin Mary "Christotokos." It was rejected as heresy in favor of Cyril of Alexandria's doctrine of the hypostatic union of Christ. For 10 points, name this heresy condemned at the Council of Ephesus that claims that Jesus has two natures, one human and one divine.

ANSWER: Nestorianism [or Nestorian Christianity; prompt on "Church of the East;" prompt on "Assyrian Church"]

17. The final movement of one composition of this type features a male chorus singing passages from Adam Oehlenschläger's *Aladdin*, and was composed by Ferruccio Busoni. Another work of this type begins with a single chord from the orchestra before a descending flourish from the solo instrument, followed by the main theme introduced by the oboe. That piece by Schumann inspired another composer to create a work of this type in A minor which opens with a timpani roll. The second movement of Mozart's twenty-first one was featured prominently in the film *Elvira Madigan*. Johann Baptist Cramer nicknamed Beethoven's E-flat-major fifth one the "Emperor." For 10 points, name this type of composition for orchestra and a solo keyboard instrument.

ANSWER: piano concertos [or piano concerti]

18. This politician's downfall began when a gang under his colleague Fulvius Flaccus murdered Quintus Antyllus. This man succeeded in adding 300 equestrians to the 300 senators in the body of potential jurors. Plutarch claimed that this man was the first to give speeches while facing away from the comitium and toward the forum. Livius Drusus proposed banning corporal punishment for Latins to undermine this man's proposal to enfranchise them. Lucius Opimius got a senatus consultum ultimum against this man, who died along with three thousand of his followers in 121 BCE, 12 years after the death of his older brother. For 10 points, name this populist tribune who proposed more sweeping reforms than his brother Tiberius.

ANSWER: Gaius Sempronius Gracchus [or Caius Sempronius Gracchus; prompt on "Gracchus"; do not accept "Tiberius Gracchus"]

19. This novel's epigraph is a Juan Ramón Jiménez quote advising the reader "If they give you ruled paper, write the other way." One of its characters opines that drivers don't know what grass or flowers are, because "they never see them slowly." A number of characters in this novel wear badges displaying salamanders. Its protagonist uses a "green bullet" to communicate with Faber. At the beginning of this novel, that protagonist meets the precocious teenager Clarisse McClellan. Its protagonist horrifies his wife's friends by reading "Dover Beach" aloud, then destroys a mechanical hound and kills Captain Beatty with his flamethrower. For 10 points, name this dystopian novel about the book-burning Fireman Guy Montag, written by Ray Bradbury.

ANSWER: Fahrenheit 451

20. When reacted with resorcinol and hydrochloric acid, linear monosaccharides with this functional group *do not* form a red color in the Selwianoff test. Since Friedel-Crafts reactions cannot synthesize these compounds substituted with just a phenyl group, the Vilsmeier-Haack or Gattermann syntheses are used instead. One equivalent of DIBAL-H will reduce nitriles to them. In water, they usually undergo hydration to form geminal diols. Ozonolysis of monosubstituted alkenes will yield these compounds, as will oxidation with PCC of primary alcohols. These compounds will reduce ammoniacal silver nitrate, to precipitate out a silver mirror, in the Tollens test. For 10 points, name these compounds which have a carbonyl group at the end of a carbon chain, unlike ketones.

ANSWER: aldehydes [prompt on "carbonyls"]

TB 1. In one appearance, this character's execution clears the way for his widow to marry the Indian prince Cawwawkee. In another appearance, a reversal of fortune prompts him to lament "at the tree I shall suffer with pleasure." In a third work, he reveals that he is an old army friend of Tiger Brown, the Chief of Police, and at the end is arbitrarily pardoned and awarded a title by Queen Victoria. In that work, he is celebrated in the opening "Moritat," or murder-ballad, and has a love interest who sings the song "Pirate Jenny." This character marries Polly Peachum at the beginning of plays by John Gay and Bertolt Brecht. For 10 points, name this bandit anti-hero of *The Beggar's Opera* and *The Threepenny Opera*, a man known for carrying a knife.

ANSWER: Macheath [or Mackie Messer; or Mack the Knife]

TB 2. The only oil field in production in this country is near the town of Spanish Lookout, one of its Mennonite communities. It has major population centers at Dangriga and Orange Walk Town. A multi-week holiday season in this country centered on its independence day includes reenactments of the Battle of St George's Caye and is known as the September Celebration. A gigantic sinkhole called the Great Blue Hole and the island of Ambergris Caye can be found in its namesake barrier reef, the second longest in the world. In 1965, this country's then-capital was flattened by Hurricane Hattie, prompting a move inland, closer to its borders with Mexico and Guatemala. For 10 points, name this only Central American country without a border on the Pacific Ocean which has its capital at Belmopan.

ANSWER: Belize

Bonuses:

1. The slope of this graph at any given point is called the marginal rate of transformation. For 10 points each:

[10] Identify this usually-concave graph from economics, the most famous example of which plots guns versus butter.

ANSWER: the production possibilities frontier [or production possibilities curve; or production possibilities boundary; or PPF; or PPC; or PPB]

[10] When the marginal rate of transformation is equal to all marginal rates of substitution, the PPF exhibits this optimality, which is named for an Italian economist and in which no individual can be made better off without making another individual worse off.

ANSWER: Pareto efficiency [or Pareto optimality]

[10] The PPF can be derived by plotting the outputs of the two involved firms on one of these constructs, a plot of the set of Pareto-optimal allocations contained in an Edgeworth box.

ANSWER: a contract curve

2. Members of this religion are baptized during the *amrit sanchar* ceremony to become members of the Khalsa order, whose male members do not shave their beards. For 10 points each:

[10] Name this Punjabi monotheistic religion. It reveres a chain of gurus starting with Nanak and ending with its holy book, the Guru Granth Sahib.

ANSWER: Sikhism [or Sikh faith; or Sikhi; or Sikhs]

[10] Each gurdwara, or Sikh temple, has a communal area of this type called a *langar* which is open to all people, regardless of religion. A Chinese god of this area reports to the Jade Emperor one each family each year.

ANSWER: kitchen [or canteen; or pantry; or dining hall; accept any answer indicating a room whose express purpose is to make, serve, eat, or store food]

[10] This Sanskrit word is used by Sikhs and Hindus alike to refer to the realm of illusion and temptations with no basis in reality.

ANSWER: maya

3. This man signed the Lancaster House Agreement in 1979 after declaring independence from Britain in 1965 and fighting the Bush War against Robert Mugabe and other guerilla leaders. For 10 points each:

[10] Name this man who led an independent Rhodesia for 14 years.

ANSWER: Ian Douglas Smith

[10] After Ian Smith was forced out of office, Rhodesia became this country, which has had two presidents since 1980: Canaan Banana and Robert Mugabe.

ANSWER: Republic of Zimbabwe

[10] Mugabe unleashed his Fifth Brigade in an operation called Gukurahundi, which targeted the Ndebele supporters of this founder of the ZAPU party, who fled to Botswana in the aftermath.

ANSWER: Joshua Mqabuko Nyongolo Nkomo

4. According to Tomonobu Imamichi, this thinker lifted his concept of "being-in-the-world-ness" from a Japanese aesthetics text called *The Book of Tea*. For 10 points each:

[10] Name this sometime Nazi who described human existence as "thrownness" into the world and analyzed a form of being called *Dasein* in his *Being and Time*.

ANSWER: Martin Heidegger

[10] This Frankfurt School theorist critiqued Heidegger's obscure prose in *The Jargon of Authenticity*. This author of *Negative Dialectics* included some music criticism in his *Aesthetic Theory*.

ANSWER: Theodor Adorno

[10] Name either term Heidegger uses in *Being and Time* for two ways that *Dasein* relates to inert objects in the world. One is more objective and distant, and the other sees an object such as a hammer in terms of its usefulness.

ANSWER: present-at-hand or ready-to-hand [accept ready-at-hand; accept presence-at-hand or readiness-to-hand or readiness-at-hand; accept Vorhandenheit; accept Zuhandenheit]

5. Identify the following about literary castles, for 10 points each.

[10] A gigantic helmet falls from the sky and crushes Conrad, son of the villainous Manfred, at the beginning of *The Castle of Otranto*, a pioneering Gothic novel by this son of the first Prime Minister of Great Britain.

ANSWER: Horace Walpole [or Horatio Walpole, 4th Earl of Orford]

[10] A giant pig named “The Empress of Blandings” lives with her owner Lord Emsworth at Blandings Castle, the setting of many stories by this English creator of Psmith and the Drones Club.

ANSWER: Pelham Grenville Wodehouse

[10] *The Castle of Indolence* is the final completed poem by this Scotsman, whose more famous works include the lyrics to “Rule, Britannia!” and the poem cycle *The Seasons*.

ANSWER: James Thomson

6. Succinate dehydrogenase, which also participates in the citric acid cycle, passes this process’s namesake particles to ubiquinone. For 10 points each:

[10] Name this final major step in aerobic respiration, in which the energy from negatively charged particles is used to generate a proton gradient across the inner mitochondrial membrane.

ANSWER: the electron transport chain [or the ETC; accept “transfer” for “transport” and “system” for “chain”, and thus the associated acronyms as well]

[10] High-energy electrons are shuttled to the ETC by NADH and this derivative of riboflavin, which is reduced during the conversion of succinate to fumarate during the citric acid cycle.

ANSWER: FADH₂ [or flavin adenine dinucleotide; or FAD⁺]

[10] This final enzyme in the mitochondrial electron transport chain converts a molecule of oxygen into two molecules of water. Its activity can be inhibited by the cyanide ion, accounting for that ion’s toxicity.

ANSWER: cytochrome c oxidase [or complex IV]

7. One member of this movement gave his paintings deceptively interesting titles like *Vir Heroicus Sublimus* and *Who’s Afraid of Red, Yellow, and Blue*, and divided his canvases with lines called “zips.” For 10 points each:

[10] Name this 20th-century art movement, closely related to abstract expressionism, which included Barnett Newman and the artist of *Magenta, Black, Green on Orange*.

ANSWER: color field painting

[10] *Magenta, Black, Green on Orange*, like many of this Latvian-born artist’s late paintings, consists of large blurry blocks of color. He was commissioned to create murals for the Four Seasons restaurant in the Seagram Building.

ANSWER: Mark Rothko [or Marcus Yakovlevich Rothkowitz]

[10] Some of the works of this painter and sculptor have been classified as color field paintings, though his more characteristic works are surrealist pieces like *The Tilled Field* and the *Barcelona* series of lithographs.

ANSWER: Joan Miró

8. Name these vaguely artistic old things, for 10 points each.

[10] An eleven-inch-high limestone carving of a voluptuous nude woman, which was discovered in Austria in 1908, is usually named for this goddess “of Willendorf.”

ANSWER: Venus of Willendorf

[10] The Yoruba carved art from this type of stone, which the Great Zimbabwe culture used to sculpt animals. The outer portions of the Christ the Redeemer statue are carved from this metamorphic rock

ANSWER: soapstone [or steatite; or soaprock]

[10] Soapstone was one type of rock used to create these tall relief carvings. These slabs were often used to publish laws and declarations or to commemorate famous or dead heroes. One example is the Code of Hammurabi.

ANSWER: stela [or stela; or stelae]

9. Solid-state physicists sometimes make use of this length scale named for a Dutch scientist. For 10 points each:

[10] Identify this quantity, which measures the range over which electric fields are screened or shielded.

ANSWER: Debye length

[10] The Debye length is also the characteristic shielding radius for this fundamental phase of matter, which is basically a fluid of charged particles.

ANSWER: plasma

[10] The impact parameter for this process in plasmas is roughly upper-bounded by the Debye length. The plasma parameter lambda is the logarithm of a ratio of impact parameters for this elastic process, which causes particles to random-walk through the plasma.

ANSWER: Coulomb scattering [or Rutherford scattering; or Coulomb collision]

10. The Cafe Bodarwe was burned down during this event, which sparked a retaliation a few weeks later in Chenogne. For 10 points each:

[10] Identify this December 17, 1944, event in which members of the 1st SS Panzer Division under Joachim Peiper executed more than 70 American POWs near the crossroads of Baugnez.

ANSWER: Malmedy massacre

[10] The Malmedy massacre took place during this final major German offensive of World War II, in which Nazi forces attempted to break through Allied lines in a major attack through the Ardennes Forest.

ANSWER: Battle of the Bulge [or Operation Watch on the Rhine; or Unternehmen Wacht am Rhein; prompt on such answers as “Battle of the Ardennes”]

[10] After the Germans surrounded Bastogne during the Bulge, Heinrich von Luettwitz asked for the Allies to surrender, which received this pithy one-word reply from 101st Airborne commander Anthony C. McAuliffe.

ANSWER: “Nuts!”

11. This poet claimed “wine exalts the will, hashish destroys it” in his de Quincey-inspired book on recreational drug use, *Artificial Paradises*. For 10 points each:

[10] Name this dissolute French author who addressed the “hypocrite reader” in the prefatory poem of a book that also includes the sections “Parisian Scenes” and “Spleen and Ideal,” *Les Fleurs du Mal*.

ANSWER: Charles Pierre Baudelaire

[10] Another Baudelaire poem describes how the “opulent display” of these title objects make his otherwise-naked love look “like Moorish concubines.” A Diderot novel is titled after some indiscreet ones.

ANSWER: jewels [or bijoux]

[10] “Les Bijoux” was written in the alexandrine meter, like the plays of this author of *Bajazet* and *Andromaque*.

ANSWER: Jean Racine

12. Versene contains a sodium salt of this compound that was discovered by Ferdinand Munz, a Nazi scientist who was searching for a cheap alternative to citric acid. For 10 points each:

[10] Name this hexadentate ligand commonly used for complexometric titrations. It has four carboxylic acid moieties.

ANSWER: EDTA [or ethylenediaminetetraacetic acid; or diaminoethane-tetraacetic acid; or edetate; or ethylenedinitrilo-tetraacetic acid]

[10] Metals chelated by EDTA usually adopt this molecular geometry, which consists of six ligands and no lone pairs.

ANSWER: octahedral geometry

[10] Metals that adopt an octahedral geometry will have the d orbitals split into two classes: those with e-sub-g symmetry, and those with this other symmetry. These orbitals correspond to the dxy, dyz, and dxz atomic orbitals.

ANSWER: t_{2g} [t-sub-2g; prompt on partial answer]

13. The alchemist Zeno of Bruges is the main character of *The Abyss*, a novel by this first female member of the Académie Française. For 10 points each:

[10] Name this author whose most famous novel takes the form of a letter in which the main character frets about the violence of the war with the Sarmatians and rhapsodizes about his lover Antinous.

ANSWER: Marguerite Yourcenar [or Marguerite Antoinette Jeanne Marie Ghislaine Cleenewerck de Cravencour]

[10] Yourcenar wrote about this author’s suicide in an essay subtitled *A Vision of the Void*. He wrote *The Temple of the Golden Pavilion* and the *Sea of Fertility* tetralogy.

ANSWER: Yukio Mishima [or Kimitake Hiraoka]

[10] A pair of Thai princes come to study at the Peers School in this first *Sea of Fertility* novel, which ends with Kiyooki Matsugae promising to see Shigekuni Honda again shortly before dying.

ANSWER: Spring Snow [or Haru no Yuki]

14. The first surviving polyphonic work in this genre, composed by Johannes Ockeghem, lacks the *Sanctus*, *Communion* and *Agnus Dei* sections. For 10 points each:

[10] Name this type of mass. Verdi’s was first performed on the one-year anniversary of the death of Alessandro Manzoni.

ANSWER: requiem mass [accept “mass for the dead” or “missa pro defunctis”]

[10] The *Dies Irae* is omitted from this composer’s requiem, which features a soprano aria in its fourth movement

Pie Jesu. He also composed the *Dolly Suite*, the *Masques et Bergamasques*, and a famous *Pavane*.

ANSWER: Gabriel Urbain **Fauré**

[10] This Italian composer and contemporary of Beethoven is known for his operas, like *Lodoiska*, as well as his C minor requiem.

ANSWER: Luigi **Cherubini**

15. One of this author's plays was dropped from consideration for the Pulitzer Prize because Hamlin Garland objected to the obscenities used by its Marine characters. For 10 points each:

[10] Name this author of *What Price Glory?*, an American playwright who wrote about the trial of Socrates in *Barefoot in Athens* and fictionalized the Sacco and Vanzetti trial in *Winterset*.

ANSWER: James Maxwell **Anderson**

[10] In this Anderson play with a title taken from *Romeo and Juliet*, Alan McLean attempts to fight a costly House resolution, but his plan to add nonsensical amounts of pork to it to ensure a veto backfires when it passes with a supermajority.

ANSWER: ***Both Your Houses***

[10] Van van Dorn, the protagonist of Anderson's *High Tor*, encounters a group of ghostly Dutchmen very similar to the ninepins enthusiasts who put the protagonist of this Washington Irving story to sleep for twenty years.

ANSWER: "**Rip van Winkle**"

16. Herbert Storing's seven-volume collection and Morton Borden's selection of 85 of these works both include the claim that "it is very difficult to convert tyranny into freedom" from "Rhode Island is Right!" For 10 points each:

[10] Name this collection of works written under such pseudonyms as "Centinel," "Brutus," "The Federal Farmer," and "Cato" that took the opposite viewpoint of writings by John Jay, James Madison, and Alexander Hamilton.

ANSWER: **Anti-Federalist** Papers

[10] "Cato" is generally thought to be this politician, who was the first vice president to serve two presidents and to die in that office, and who also spent 21 nonconsecutive years as governor of New York.

ANSWER: George **Clinton** [prompt on "Clinton"]

[10] This woman, who wrote an anti-Federalist pamphlet under the name "A Columbian Patriot," worked for years on her three-volume *History of the Rise, Progress, and Termination of the American Revolution*.

ANSWER: Mercy Otis **Warren** [or Mercy **Otis**]

17. Athenaeus claimed that this man chased a hare around Mt. Oria until it collapsed from exhaustion, then revived it with grass from a spring. For 10 points each:

[10] Name this fisherman who discovered an herb that could bring fish back to life. Upon tasting the herb, this man grew fins and a fish's tail and thereafter became a prophetic sea-god.

ANSWER: **Glaucus**

[10] In one story, Glaucus sought to woo this woman with a love potion from Circe, but Circe poisoned her instead, turning her into a six-headed monster. This creature lives on a cliff across from the whirlpool-spewing Charybdis.

ANSWER: **Scylla**

[10] The *Aeneid* claims that Glaucus fathered this woman, who sold three books of prophecies to Tarquinius Superbus after burning six others and escorted Aeneas to the underworld through a tunnel near Lake Avernus.

ANSWER: the **Cumaean Sibyl** [or **Deiphobe**; or **Herophile**]

18. Identify some archaeological sites with a couple of things in common, for 10 points each.

[10] The Y and Z holes are found outside the circle of Sarsen stones that make up this monument, which consists of a ring of standing stones and several rings of earthworks, and which is located near Salisbury in England.

ANSWER: **Stonehenge**

[10] Raedwald of East Anglia and his son Sigeberht are generally held to be the most likely identities of the occupant of the large ship buried under a mound at this archaeological site near Woodbridge in Suffolk County.

ANSWER: **Sutton Hoo**

[10] Grooved ware pottery and skaill knives are among the artifacts found at this site, a cluster of eight Neolithic stone houses found on Mainland in the Orkneys.

ANSWER: **Skara Brae**

19. Identify the following about the adventures of George Canning, for 10 points each.

[10] Canning was foremost among the group of Pitt the Younger devotees who refused to join this wide-ranging coalition government formed in 1806 by William Grenville.

ANSWER: Ministry of All the Talents

[10] Canning spent most of 1809 feuding with this Irish statesman, culminating in a duel on Putney Heath. This man later led British negotiations at the Congress of Vienna.

ANSWER: Lord Castlereagh [or Robert Stewart, Viscount Castlereagh; or 2nd Marquess of Londonderry]

[10] Shortly after the duel, Canning was passed over for the position of prime minister in favor of this man, who once said, "I have nothing to say to the nothing that has been said." He was replaced by the Earl of Liverpool as prime minister in 1812.

ANSWER: Spencer Perceval

20. The extreme value theorem holds only on intervals with these two properties. For 10 points each:

[10] Name these properties. A subset of \mathbb{R}^n with these two properties is compact, according to the Heine-Borel theorem. A set with these two properties contains all its limit points and is of finite extent.

ANSWER: closed and bounded [accept in either order; accept word forms; prompt on partial answer]

[10] According to the Bolzano-Weierstrass theorem on \mathbb{R}^n , every bounded sequence has a sub-sequence with this property. A sequence is a Cauchy sequence if and only if it has this property, which the harmonic series lacks.

ANSWER: convergent [or word forms]

[10] The conditions for compactness of a family of functions over one of *these* spaces are given in the Arzela-Ascoli theorem. These spaces obey the T_2 axiom and in them, distinct points have disjoint neighborhoods.

ANSWER: Hausdorff spaces [or separated spaces; do not accept "separable spaces"]