



1. One character in this novel tells another to "fear prophets...and those prepared to die for the truth, for as a rule they make many others die with them, often before them, at times instead of them." Upon introduction, one character in this novel is surprised at how much one man knows about a lost horse. One character in this novel turns up dead in a vat of pig's blood. Berengar and Severinus die in this novel, much like their superior, Abo of Fossanova, later does. In this novel, the protagonists investigate a series of murders instigated by Jorge of Burgos. For 10 points, name this novel featuring Adso of Melk and William of Baskerville, written by Umberto Eco.

ANSWER: *The Name of the Rose* [or *Il Nome della Rosa*]

040-12-59-03102

2. One holder of this position derisively referred to Francis Cottington as "Lady Mora's waiting maid" and to Richard Weston as "Lady Mora" in his correspondence with the Earl of Strafford. That holder of this position ordered the arrest of the propagandists Alexander Leighton and William Prynne. In addition to William Laud, who was executed during the English Civil War, another holder of this position opposed the Lollard movement and was named Thomas Arundel. One man in this position was exiled after refusing to sign the Constitutions of Clarendon, and another edited the Book of Common Prayer. For 10 points, identify this highest position in the Church of England.

ANSWER: Archbishop of Canterbury

014-12-59-03103

3. One character in this work sings a ballatella about the freedom of the birds in the scene following the "Bell Chorus." In another scene, a character shouts "Name of God! Those same words" after hearing a woman say "I will always be yours!" for the second time. After discovering his wife's infidelity, one character tells himself to "laugh at the grief that poisons your heart" and perform the aria's title action "because people have paid money and want to be amused." That aria, "Vesti la giubba," is sung by Canio, who stabs Nedda while she is playing the role of Columbine. For 10 points, name this Leoncavallo opera frequently performed alongside *Cavalleria Rusticana*.

ANSWER: Pagliacci [or *I Pagliacci*; or Players; or Clowns]

052-12-59-03104

4. In Celtic myth, one of these things has the power either to kill nine men or bring nine men back to life. Yam is killed by two of them called "Chaser" and "Driver," which Baal owns. Bhima unfairly uses one of these objects to bring down Duryodhana, and the Dagda owns another. Theseus steals one of these weapons from a lame son of Hephaestus, Periphetes. At the beginning of *The Frogs*, Dionysus is carrying one of these weapons in imitation of their most famous wielder, who used one to great effect after arrows bounced off the pelt of his target, the Nemean Lion. For 10 points, name this blunt weapon used by Heracles.

ANSWER: a club [or a mace, since some of the clues apply]

080-12-59-03105

5. This book uses single hash marks to quote subjects anonymously and contains sections entitled "The Circle of Human Feelings" and "The Dilemma of Virtue." This work describes hierarchy as a social mechanism and details obligations of repayment, including committing suicide to clear one's name. On and giri are analyzed in this work. The author of this work, which popularized the terms "shame culture" and "guilt culture," sought to de-mystify its central culture and understand the enemy, but was forced to conduct unorthodox research after World War II. It discusses the impact of the Meiji restoration. For 10 points, name this work subtitled "Patterns of Japanese Culture," written by Ruth Benedict.

ANSWER: *The Chrysanthemum and the Sword*

124-12-59-03106

6. This physicist names atoms that feel a van der Waals attraction or repulsion to one another that scales as the eleventh power of the principal quantum number. Those atoms make up a type of matter that does not interact with light because it does not have any vibrational transitions in the IR range. His constant can be found by multiplying the square of the fine structure constant by the rest mass of the electron and the speed of light and dividing by two times Planck's constant. A principle named for Ritz and him states that it is possible to find pairs of spectral lines whose wavenumbers sum to an observed spectral line. For 10 points, name this physicist who derived a formula for finding the spectral lines of hydrogen-like atoms that was explained by the Bohr model.

ANSWER: Johannes Robert Rydberg

066-12-59-03107

7. This man repeatedly criticized Terry Allen for his lack of discipline and unsuccessfully attempted to have him removed from command. While serving as a deputy commander, this man commanded the troops that captured Bizerte in 1943. One Congressional testimony of this man opined that "the wrong war, in the wrong place, in the wrong time, with the wrong enemy" would result from invading China. He led the II Corps invading Sicily after replacing his former commander, George S. Patton. For 10 points, name this most recent five-star American general, who became the first Chairman of the Joint Chiefs of Staff after commanding the entire Twelfth Army Group from the aftermath of D-Day to the end of World War II.

ANSWER: Omar Nelson Bradley

014-12-59-03108

8. This poet repeated the line "Weave, weave the sunlight in your hair" in "La Figlia che Piange." One of this author's poems ends with the speaker wondering, "And should I have the right to smile?" after the title character declares, "I will sit here, serving tea to friends." The speaker of another of his poems hears "the mermaids singing, each to each," and says "I do not think that they will sing to me." In that poem, this author of "Portrait of a Lady" compares the evening to "a patient etherized upon a table" and describes a room "where women come and go, talking of Michelangelo." For 10 points, name this poet of "The Love Song of J. Alfred Prufrock."

ANSWER: Thomas Stearns Eliot

014-12-59-03109

9. This painter's *Flowering Apple Tree* shows no apples. A blue woman with a yellow Star of David on each of her shoulders stands in the third panel of this man's triptych *Evolution*. This man's experiments with cubism produced the work *Pier and Ocean*. This man produced many diamond-shaped paintings called "lozenges," in which he sometimes experimented with "visual rhythms" influenced by jazz. This man, who split with Theo van Doesburg over the use of diagonal lines, coined the term Neo-Plasticism to describe the movement he was a part of. The Manhattan street grid inspired his painting, *Broadway Boogie-Woogie*. For 10 points, name this Dutch painter, who helped found De Stijl.

ANSWER: Piet Mondrian

079-12-59-03110

10. Patients with mutations in EVER1 or EVER2 are unusually susceptible to this virus. This virus' L1 protein mediates attachment to GAGs, and one disease caused by this virus is diagnosed by finding koilocytes. HeLa cells contain DNA from this virus. One protein produced by this virus forms a complex to form E6AP and suppress p53. Another protein produced by this virus causes the host cell to switch to the S phase by binding to pRB, which causes the release of E2F. Those two proteins are E6 and E7. A disease caused by this virus can be diagnosed with a pap smear. Gardasil is a vaccine against this virus which only infects basement epithelium cells. For 10 points, name this virus that causes genital warts and cervical cancer.

ANSWER: **human papilloma** virus [or **HPV**]

140-12-59-03111

11. This character earns money for his family by selling twelve silver plates to a thrifty Jew, who only gives him one sixtieth of their value. A villain murders and disguises himself as the holy woman Fatima in an attempt to have this character killed. This character hides behind the door of a bath in order to see his future wife, Princess Badroulbador. Earlier, this character accidentally brushes the ring on his finger when he clasps his hands in prayer to Allah. At the beginning of his story, an African magician comes to China pretending to be this character's uncle, but later seals this character inside of a cave. For 10 points, name this character from the *Arabian Nights* who summons a genie with a magic lamp.

ANSWER: **Aladdin**

080-12-59-03112

12. Historian Seth Tillman described one participant at this event, Billy Hughes, as a "noiseless demagogue" who claimed he spoke for 60,000 dead men. A failed "Racial Equality Proposal" at this event was suggested by Baron Makino Nobuaki. One participant in this event said he "was seated between Jesus Christ and Napoleon." The May Fourth Movement denounced this event's final results. During it, Ho Chi Minh's petition for the Vietnamese people's civil rights were ignored. The main leaders at this event included Vittorio Orlando and the other members of the "Big Four," including Georges Clemenceau and David Lloyd George. For 10 points, name this meeting which ultimately produced the Treaty of Versailles after World War I.

ANSWER: **Paris Peace Conference** [or **Versailles Peace Conference** until "Versailles" is read; accept synonyms for "peace conference"; do not accept "Treaty of Paris"]

052-12-59-03113

13. This composer dedicated his 14th string quartet to Baron von Stutterheim, who took in his nephew and ward, Karl, after an attempted suicide. He dedicated three quartets to Nikolai Galitzin, including his thirteenth quartet, whose sixth movement was excised as unplayable. The output of his middle period includes pieces nicknamed "Harp" and "Serioso", as well as three dedicated to Count Razumovsky. Outside of chamber music, he composed a funeral march in rondo form for one symphony, and his piano sonatas include the *Appassionata*. That E-flat major symphony is regarded as a turning point toward Romanticism. For 10 points, name this German composer of the *Eroica Symphony*.

ANSWER: Ludwig van **Beethoven**

080-12-59-03114

14. The speaker of this text declares, "the good that I would I do not; but the evil which I would not, that I do," after noting, "For we know that the law is spiritual; but I am carnal, sold under sin." The speaker downplays the significance of circumcision, saying, "But he is a Jew, which is one inwardly; and circumcision is that of the heart, in the spirit, and not in the letter." Later, the speaker of this text asks, "If God be for us, who can be against us?" in discussing how faith alone unites a sinner with the sinless Jesus and assures salvation. For 10 points, name this first and longest Pauline epistle, addressed to members of a certain empire.

ANSWER: Epistle to the **Romans**

014-12-59-03115

15. For space, this quantity is equal to the Hubble constant squared over c squared times omega-M plus the mass density of the cosmological constant over the critical density minus one. One form of this quantity is roughly equal to the inverse of the Hubble distance squared. For a parameterized space curve $r(t)$ this quantity is equal to the magnitude of r' crossed with r'' over the magnitude of r' raised to the third. One over the absolute value of this quantity is equal to its namesake radius. For a sphere, this quantity is equal to one over radius squared. For 10 points, name this quantity that measures how much an object deviates from being flat or a straight line.

ANSWER: **curvature**

149-12-59-03116

16. The main building of this country's national library is unique in that it was designed in the shape of a rhombicuboctahedron. Among its noted sites is the residence of the Radziwill family called Nesvizh Castle. Most of the early course of the Pripyat River flows through this nation, passing through cities such as Brest, once known as Brest-Litovsk. It was estimated that about 70% of the radiation from Chernobyl was blown into this country. Foreign observers have accused its president of running the last dictatorship in Europe. For 10 points, name this Eastern European nation, led by Alexander Lukashenko, whose name roughly translates as "White Russia."

ANSWER: Republic of **Belarus**

064-12-59-03117

17. For palladium (II) cyanide and EDTA ("E"- "D"- "T"- "A"), this value is found by introducing a weaker ligand in the so-called competition method. In most circumstances, the activity coefficients are removed from the equation to calculate this quantity, which for gas phase species is approximated by fugacity over standard pressure. The van't Hoff equation states that for exothermic reactions, it decreases with increasing temperature. This value is equal to x , x squared, $2x$ cubed, and so on, if x is the molar solubility and the reaction is dissociation. The law of mass action is used to find this quantity, which, if greater than Q , favors the forward reaction. For 10 points, name this constant that relates concentrations of products and reactants.

ANSWER: **equilibrium** constant [or **K_{eq}**; or **K_{eq}**]

020-12-59-03118

18. This poet buried his work in his wife's grave after her suicide, but later dug them back up. He claimed that his most famous poem was a reversal of Poe's "The Raven." This man wrote the article "The Stealthy School of Criticism" in response to Robert Buchanan's claim that he belonged to "the fleshly school" of poetry. In one of his poems, he described a character with hair "yellow like ripe corn" who carries "three lilies in her hand." The title character of that poem sees souls go by like "thin flames" while leaning "out from the gold bar of heaven." For 10 points, name this poet of "The Blessed Damozel," a member of the Pre-Raphaelite Brotherhood.

ANSWER: **Dante Gabriel Rossetti** [prompt on **Rossetti**]

080-12-59-03119

19. It's not Japan, but this empire's leaders included Sakoura, who seized the copper-producing Takedda region. One map of this empire in the *Catalan Atlas* shows its leader holding a fleur-de-lis staff in one hand and looking to the left at a gold nugget he holds in the other. Its 44-article constitution established sixteen "quiver-carrier" clans which were all represented in the Gbara. This empire's landmarks included a learning center at Sankore and a religious building at Djenne, both made of mudbrick. Its founder won a battle at Kirina over the Soso leader Sumanguru, and a later leader of it lowered the value of Egypt's gold when he went on the hajj. For 10 points, name this West African empire led by Sundiata and Mansa Musa.

ANSWER: **Mali** Empire [or **Manden** Kurufa; or **Mandinka**]

124-12-59-03120

20. This work includes an appendix, with replies to the criticisms of Hobbes and Gassendi, where the author asserts that atheists can't do science. The author introduces the concept of self-validation of existence in this work, which compares habits of thinking to slaves dreaming of sunrise. This work notes that two plus three equals five even in dreams. This work asserts that shape is not an essential characteristic of wax because it can be melted. This work takes place in six consecutive Days and seeks to prove there is a god. For 10 points, name this work concluding that the senses cannot lead one to God and thus rationalism is needed, by Rene Descartes.

ANSWER: ***Meditations on First Philosophy in which the Existence of God and the Distinction Between Mind and Body are Demonstrated***

124-12-59-03121

21. One ruler of this region rejected marriage with Eudocia Comnena, living up to his reputation as a troubadour by marrying a peasant named Sancha. Another ruler of this region was killed at the Battle of Muret in a headlong attack against the forces of Simon of Montfort; that monarch of this region was known as "the Catholic." This polity conquered Sicily in the wake of the Sicilian Vespers Uprising in 1282 during the reign of its "Great" king, Peter III. This region's first king, Ramiro I, was a son of Sancho the Great of Navarre, and it was formed from Sancho's partitions of his realm. For 10 points, name this region of Spain from which Catherine, the first wife of Henry VIII, hailed.

ANSWER: **Aragon**

040-12-59-03122

22. This character never tells the narrator whether he winked or not when they first met at Slade's. He claims that man "passeth from the stink of the dydie to the stench of the shroud" when he is told there may not be something to find out about another character. This character never drinks until he learns he is a pawn of Harrison. After that revelation, this man goes on a drinking spree and delivers a speech accusing Tiny Duffy of being "Judas Iscariot" and throwing his support behind MacMurfee, who wins the election. He is shot by the man he hired to direct his new hospital after that man learns this character had an affair with his sister Anne. For 10 points, name this boss of Jack Burden and Southern governor depicted in *All the King's Men*.

ANSWER: **Willie** Stark [or Willie **Stark**]

121-12-59-03123

23. A well-known transport model of this substance was developed by Hans Albert Einstein; others were developed by Meyer-Peter and Muller. A mobility number encountered in the modeling of this substance is the Shields parameter. The burst-sweep cycle occurs in the context of its transport. G.K. Gilbert conducted studies of this substance using a flume. Found in bed load, two characteristics of this substance are angularity and sorting, in which it is "sorted" according to grain size when transported. For 10 points, identify this term for loose particulate material produced by the weathering of rocks.

ANSWER: **sediment** [accept bed/loose **particles** before "particulate" is read]

066-12-59-03124



1. This group's acts included assassinating Siegfried Buback and kidnapping Hans-Martin Schleyer. For 10 points each:

[10] Name this group, three of whose members, including Gudrun Ensslin and Jan-Carl Raspe, were found dead in Stammheim Prison in 1977.

ANSWER: the **Red Army Faction** [or the **Baader-Meinhof** gang; or the **Rote Army Fraktion**]

[10] The Red Army Faction was active in this central European country, which was led from 1949 to 1963 by Konrad Adenauer.

ANSWER: West **Germany** [or Federal Republic of **Germany**; or West**deutschland**; or Bundesrepublik **Deutschland**; or **FRG**; or **BRD**]

[10] In 1979, the Red Army Faction destroyed a bridge in Belgium in an attempt to assassinate this Supreme Commander of NATO. This man was the White House Chief of Staff during the Watergate scandal, and as Secretary of State, he asserted "I am in control here" after the attempted assassination of Ronald Reagan.

ANSWER: Alexander **Haig**

014-12-59-03201

2. The two main sources for this code are the Quran and the example of Muhammad's own life, the Sunnah. For 10 points each:

[10] Name this body of religious law in Islam.

ANSWER: **sharia**

[10] The sayings and actions of Muhammad usually come from one of these collections. Sunni Muslims consider the six books of al-Sihah al-Sittah to be the authoritative collection, while Shi'ites use the books written by the "Three Muhammads."

ANSWER: **hadith**

[10] A controversy within sharia is whether this "independent reasoning" without reference to earlier authorities is acceptable in modern times.

ANSWER: **ijtihad**

121-12-59-03202

3. This side of the Big Island contains the last undeveloped fishing village in Hawai'i, Miloli'i (Mee-loh-lee-ee), and the cities of Captain Cook and Honaunau (Hoh-now-now). For 10 points each:

[10] Name this side of the Big Island, famed for its coffee, that is contrasted with the rainier Hilo (Hee-loh) side.

ANSWER: Kailua-**Kona**

[10] The region of South Kona sits on the slopes of this active volcano. It is home to the Keeling Observatory, which tracks atmospheric carbon dioxide concentration.

ANSWER: **Mauna Loa**

[10] In 1996, the last plantation raising this crop, formerly the basis of the Hawaiian economy, closed; this crop's cultivation and boiling in the Caribbean was the basis for the harshest form of agricultural slavery in the eighteenth century.

ANSWER: **sugarcane**

124-12-59-03203

4. One figure who arrives at this location is a youth overjoyed that he can now beat up his father. For 10 points each:

[10] Name this idealistic “city-in-the-sky” created by Pishetaerus and Euelpides in the comedy *The Birds*. The goal of creating this location is to blockade the Olympian gods from reaching Earth.

ANSWER: **Cloud Cuckoo Land** [or **Nephelokokkygia**]

[10] *The Birds* was written by this master of Greek comedy, whose other satirical works include *The Clouds* and *The Frogs*.

ANSWER: **Aristophanes**

[10] Near the end of the play, this figure shows up advising Pishetaerus about how to negotiate with the gods. He wields a parasol so Zeus cannot see him. In another play, this figure predicts Io’s future and rejects an offer related by Hermes from Zeus.

ANSWER: **Prometheus**

052-12-59-03204

5. Answer the following about the bossa nova musical style for 10 points each.

[10] One of the most famous pieces of bossa nova music is “The Girl from Ipanema,” which was popularized in a hit recording by this jazz saxophone musician. He recorded the song with Astrus and Joao Gilberto in 1964.

ANSWER: Stanley **Getz**

[10] The composer of “The Girl from Ipanema,” Antonio Carlos Jobim, also collaborated with this female jazz singer, the so-called “First Lady of Song.” She was noted for her scat singing and swing recordings.

ANSWER: Ella Jane **Fitzgerald**

[10] An early influence of the Caribbean style in music was seen in this composer’s *Cuban Overture*. This man also composed *An American in Paris* and worked on Broadway shows with his brother Ira.

ANSWER: George **Gershwin**

052-12-59-03205

6. This man wrote the play *Nemesis* about the Beatrice Cenci murder case. For 10 points each:

[10] Name this Swedish chemist and inventor of dynamite. His last will and testament set up his namesake prizes which go to eminent achievements in physics, chemistry, and achieving world peace.

ANSWER: Alfred Bernhard **Nobel**

[10] Nobel was reportedly inspired to create the Nobel Prizes after reading one of these in 1888. It infamously used the phrase "the merchant of death."

ANSWER: his **obituary** [prompt on **newspaper**]

[10] The obituary was referencing Nobel's invention of dynamite and his ownership of this Swedish company, a former iron and steel producer that, under Nobel's ownership, began to produce cannons and chemical weapons. It produced an anti-aircraft gun widely used during World War II.

ANSWER: AB **Bofors** [or Aktiebolaget **Bofors**-Gullspang; or AB **Bofors** Nobelkrut; or BAE Systems **Bofors**; or Saab **Bofors** Dynamics]

052-12-59-03206

7. This principle gives an equation stating that the sum of the fluid flow squared over two with the force potential and pressure over density equals a constant. For 10 points each:

[10] Name this principle that states that an increase in a fluid's speed results in a decrease in pressure or the fluid's potential energy.

ANSWER: **Bernoulli's** principle

[10] Bernoulli's principle applies to this type of flow for an ideal fluid, which is assumed to have zero viscosity.

ANSWER: **inviscid** flow

[10] For inviscid flow these equations reduce to the Euler equation. Poiseuille flow can occur when the non-linear terms of these equations are set to zero.

ANSWER: **Navier-Stokes** equations

149-12-59-03207

8. This poem opens with a description of a storm that "tore the elm-tops down for spite, and did its worst to vex the lake." For 10 points each:

[10] Name this poem in which "God has not said a word!" after the narrator chokes the title character with her own hair.

ANSWER: "**Porphyria's Lover**"

[10] "Porphyria's Lover" was written by this Victorian poet of "My Last Duchess" and "Fra Lippo Lippi."

ANSWER: Robert **Browning**

[10] Browning's poem "Childe Roland to the Dark Tower Came" concludes with the title character setting this object to his lips and blowing. Chatterton was the first to use this term to refer incorrectly to an instrument.

ANSWER: **slug-horn**

015-12-59-03208

9. Answer the following about political biographies, for 10 points each.

[10] This President wrote his memoirs in 1885 while he was dying, and they were published by Mark Twain to support this man's family. He talked mostly about the Civil War and not his scandal-filled presidency.

ANSWER: Ulysses S. **Grant** [or Hiram Ulysses **Grant**]

[10] This man's lengthy autobiography was called *My Life*. His former advisor, Dick Morris, wrote the rebuttal book *Because He Could*.

ANSWER: Bill **Clinton** [or William Jefferson **Clinton**; or William Jefferson **Blythe** III]

[10] This memoir written by Barack Obama is subtitled "A Story of Race and Inheritance." It describes his childhood, his visit to Kenya, and it ends with his attending Harvard Law School. It was followed up by *The Audacity of Hope*.

ANSWER: ***Dreams from My Father: A Story of Race and Inheritance***

052-12-59-03209

10. The centerpiece of this work is a statue of Oceanus, flanked by two allegorical sculptures of Abundance and Salubrity. For 10 points each:

[10] Name this work designed by Nicola Salvi, which also contains two nudes trying to tame calm and wild seahorses, respectively. This work can be found in a namesake square of the Quirinale district.

ANSWER: the **Trevi Fountain**

[10] The Trevi Fountain is sometimes inaccurately attributed to this Baroque sculptor, who did design the *Fountain of the Four Rivers*. He sculpted *The Ecstasy of Saint Theresa*.

ANSWER: Gian Lorenzo **Bernini**

[10] In Bernini's *Fountain of the Four Rivers*, the Nile is wearing one of these things, since its source had not yet been discovered.

ANSWER: a **cloth** covering its head [or a **shroud**; or a **blindfold**; or a **veil**; or equivalents that specify some sort of cloth]

088-12-59-03210

11. The most recent version of this language introduced a nullptr that is distinct from 0. For 10 points each:

[10] Name this programming language created by Bjarne Stroustrup whose iostream library provides for output using the cout object. It is an "incremental" update of a language created by Dennis Ritchie.

ANSWER: **C++**

[10] These constructs in C++ allows an object to be accessible by multiple names. Unlike pointers, once one of these constructs has been created, it cannot be made to point to a different object. Their declaration includes an ampersand on the left hand side. Programming languages often pass by this or by value.

ANSWER: **references**

[10] Functions with this property in C++ use an ellipsis in their declaration and make use of a certain underscore list object and underscore start macro. In some LISP variants this property is given to functions through ampersand rest and in python it is given using an asterisk.

ANSWER: **variable number of parameters** [or **variable number of arguments**; or **variadic** function; accept anything that indicates that the number of arguments or parameters in a function or method is not predefined/constant; prompt on multiple arguments or parameters]

001-12-59-03211

12. Those who wish to reach this location must cross the river Gjoll, which is guarded by Modgud. For 10 points each:

[10] Name this cold underworld of Norse myth. It is not to be confused with Helheim.

ANSWER: **Niflheimr**

[10] This dragon resides in Niflheim, specifically in Nastrond. He chews on the roots of Yggdrasil.

ANSWER: **Nidhoggr**

[10] The combination of Niflheim's cold and Muspellheim's heat created the world. At the beginning of creation, this primordial cow provided milk to Ymir and licked Buri out of an ice block.

ANSWER: **Audhumla**

088-12-59-03212

13. One member of this family, Esteban, marries the psychic Clara del Valle. For 10 points each:
[10] Name this family which also includes Blanca, who becomes pregnant with the child of Pedro Tercero Garcia. It is the central family of *The House of the Spirits*.

ANSWER: **Trueba**

[10] *The House of the Spirits* was written by this Chilean author. She incorporated magical realist elements into works like *Eva Luna*.

ANSWER: Isabel **Allende**

[10] In this memoir, Allende struggles with the approaching death of her daughter, who went into a coma. It proceeds to recount the rest of Allende's life.

ANSWER: **Paula**

080-12-59-03213

14. A special type of this form of music is a recitation formula, which has a reciting pitch on which a singer intones most of the syllables of the words to be sung. For 10 points each:

[10] Identify this form of monophonic plainsong named after a Pope.

ANSWER: **Gregorian chant**

[10] This ecclesiastical chant has much in common with Gregorian chant, but its textual basis is usually nonscriptural. The earliest hymns in this tradition were *troparia*, which were succeeded by *kontakia* and themselves by *kanon*.

ANSWER: **Byzantine chant**

[10] The Renaissance form of this texture, pioneered by Guillaume Dufay, Johannes Ockeghem and Josquin des Prez, eventually supplanted Gregorian chant for use in the Mass Proper.

ANSWER: Renaissance **polyphony**

066-12-59-03214

15. Answer these questions about the Russian Revolution of 1905, for 10 points each.

[10] The revolution occurred during the reign of this final Tsar of the Russian Empire.

ANSWER: **Nicholas II** [or **Nikolay Aleksandrovich**; prompt on **Nicholas**; prompt on **Nikolay**]

[10] The revolution was sparked when hundreds of protesting workers, under the leadership of this priest, were killed by the state's forces on Bloody Sunday.

ANSWER: Georgy Apollonovich **Gapon**

[10] During the revolution, this counterrevolutionary movement committed terrorist actions in defense of the autocratic system. They also killed some Jews for good measure.

ANSWER: **Black Hundreds** [or **Black Hundred**; or **black-hundredists**]

080-12-59-03215

16. Human eyes can view objects with a value between -1 and 7 for the apparent version of this property. For 10 points each:

[10] Name this logarithmic measure of how bright an object is. The difference between the apparent and absolute form of this quantity is equal to five times the log of distance minus five.

ANSWER: **magnitude**

[10] One type of this diagram maps a stars spectral type against its magnitude. Most stars fall on the main sequence in this diagram, while protostars evolve along the Hiyashi track on this diagram.

ANSWER: **Hertzsprung-Russell** diagram [or **HR** diagram]

[10] This type of magnitude, which measures a star's luminosity across all wavelengths, is equal to a star's visual absolute magnitude plus this magnitude's "correction factor."

ANSWER: **bolometric**

149-12-59-03216

17. In this novel, Rashleigh absconds with his family's assets in order to ruin the economy of the Scottish highlands and inspire them to revolt against England. For 10 points each:

[10] Name this questionably-plotted novel, in which Frank Osbaldistone tries to recover those assets during the Highland Rising of 1715.

ANSWER: **Rob Roy**

[10] This author of *Ivanhoe* and *Waverley* wrote *Rob Roy*.

ANSWER: Walter **Scott**

[10] This Scott novel opens with a description of the Porteous Riots and focuses on the wrongly-imprisoned Effie Dean, who is ultimately pardoned by Queen Caroline.

ANSWER: *The* **Heart of Midlothian**

080-12-59-03217

18. Answer the following about social criticism about poverty and discrimination, for 10 points each.

[10] This 1961 book by John Howard Griffin described what happened when Griffin used drugs and an ultraviolet lamp to pass as an African-American while traveling through the South.

ANSWER: **Black Like Me**

[10] This Englishman wrote *Down and Out in Paris and London* about the poverty he found in both capitals. He wrote about his experiences as a Burmese policeman in "Shooting an Elephant" and as a novelist, created the fictional government under Big Brother.

ANSWER: George **Orwell** [or Eric Arthur **Blair**]

[10] This female author posed as a Wal-Mart employee in her book about the "working poor" titled *Nickel and Dime*. A more recent book is *Bright-sided: How the Relentless Promotion of Positive Thinking Has Undermined America*.

ANSWER: Barbara **Ehrenreich**

052-12-59-03218

19. This poem describes a musician who "slept like a rock or a man that's dead." For 10 points each:

[10] Name this poem about a man "rocking back and forth to a mellow croon" while playing a "drowsy syncopated tune."

ANSWER: "The **Weary Blues**"

[10] "The Weary Blues" was written by this poet of the Harlem Renaissance. He asked what happens to a dream deferred in his poem "Harlem."

ANSWER: James Mercer Langston **Hughes**

[10] In Hughes's "Theme for English B," the instructor tells his pupils to "let that page come out of you" so that it will have this quality.

ANSWER: **truth** [or obvious equivalents]

014-12-59-03219

20. Answer some questions about everyone's favorite teratogenic drug, valproic acid. For 10 points each:

[10] Valproic acid is commonly used in the treatment of this disorder. Sufferers have recurrent, unprovoked seizures

ANSWER: **epilepsy**

[10] Giving valproic acid to pregnant women can induce this condition in the fetus, in which the posterior neural tube fails to close. This happens because valproic acid is a folate antagonist

ANSWER: **spina bifida**

[10] Valproic acid inhibits the first of these proteins, which are responsible for helping to form heterochromatin. They remove a certain chemical group from the lysine residues of histones.

ANSWER: histone **deacetylases**

048-12-59-03220

21. The first step in this process is showing that a statement holds for a base case of $n=1$. For 10 points each:

[10] Name this method of proof in which one substitutes a second value into the base case to demonstrate a statement holds for all n .

ANSWER: **induction**

[10] To prove a statement by induction, this value is substituted for n for the already-proven base case.

ANSWER: **$n+1$**

[10] This type of induction uses the assumption that the statement to be proven holds for all natural numbers less than or equal to n , not just n itself.

ANSWER: **strong** induction [or **complete** induction]

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