

ACF Regionals 2015: A Livable Community

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Tossups

1. This process can be induced in cells by sodium deoxycholate or NP-40. In another context, the Rz and Rz1 proteins help induce this process. Gram-positive bacteria undergo this process when acted upon by an enzyme present in hen egg white also known as muramidase. In protists, this process is continually averted by the action of acidocalcisomes in tandem with contractile vacuoles. This process occurs when a cell is placed in an excessively hypotonic solution. A viral reproduction cycle named for the fact that it causes the host cell to undergo this process is contrasted with the lysogenic cycle. For 10 points, name this general process in which a cell is destroyed via the rupturing of its membrane.

ANSWER: lysis [or cytolysis; or osmotic lysis; or lytic cycle; prompt on "bursting" or "cell disruption"]

2. A great-grandson of this man fought with Goffarius of Aquitaine and was accompanied to Albion by Corineus, namesake of Cornwall. This man wins a fight after a shrieking bird flies around his enemy, terrifying that enemy. This man is given ships by Tarchon, and Cymodocea leads some sea nymphs which had formerly been his ships. According to Geoffrey of Monmouth, a great-grandson of this man named Brutus was the first king of the Britons. This man stabs an enemy upon seeing a belt taken from this man's dead companion, Pallas. Hector appears to this figure in a dream, telling him to flee, but his wife Creusa dies in the attempt. This killer of Turnus was the father of Ascanius. For 10 points, name this Trojan hero who fled to Italy and became ancestor to the Romans.

ANSWER: Aeneas

3. 1300 people died when this country's Ojhri ammunition depot exploded, in what may have been a cover-up of its westward sale of Stinger missiles. Another country's Operation Brasstacks military drill antagonized this country. U.S. ambassador Arnold Raphel died with a leader of this country in a C-130 Hercules crash after the "Doctrine of Necessity" defended a coup called Operation Fair Play here. This country lost most of the "world's highest battlefield," the Siachen glacier, in a 2003 ceasefire. Muhammad Zia-ul-Haq supported scientist A.Q. Khan while leading this country, which aided the anti-Soviet Operation Cyclone by sending in its intelligence agency, the ISI. For 10 points, name this nation with nuclear weapons, once led by Zulfikar Ali and Benazir of the Bhutto family.

ANSWER: Islamic Republic of Pakistan [or Islamiya Jumhuriya-yi Pakistan]

4. The seventh book of this text claims that the phrase "pale man" is not a unified definition of anything, even though we can use a single word such as "cloak" to refer only to pale men. Its opening paragraph claims that we delight in senses like vision since "All men by nature desire to know." Its twelfth book posits a thought which is a thinking on thinking. This text claims that a potential principle of matter and an actual principle of form combine to make up each "primary substance." Aquinas's *Summa Theologica* equates God with the "unmoved mover" in this text, which was originally presented *after* notes on the nature of change and movement towards a *telos*. For 10 points, name this study of "being *qua* being" by Aristotle, whose name now graces a subfield of "first philosophy."

ANSWER: Metaphysics [or *ta meta ta physika*; or Metaphysica; accept any answer indicating the writings on, or notes from lectures about, metaphysics attributed to Aristotle]

5. For aqueous solutions with a solute mole fraction less than 1%, the Szyskowski equation can be used to compute this value. In the Gibbs isotherm, the value capital gamma-sub-i for each solute is equal to minus one over RT times the partial derivative of this value with respect to the natural-log concentration of that solute, keeping P and T constant. For two adjacent bubbles of unequal radii, the pressure difference between the bubbles is equal to twice this value times the difference in reciprocal radii of the bubbles. Under conditions of constant temperature and pressure, this value is given by the partial derivative of Gibbs free energy with respect to area. This quantity varies inversely with volume to the two-thirds power in Eotvos's rule. For 10 points, name this elastic tendency of liquids to contract in surface area.

ANSWER: surface tension

6. This novel's protagonist wonders whether a new acquaintance is French due to her pronunciation of "du bout des doigts," after that other character plays Schubert on the piano at a dying man's house. A character in this novel is sent to a nunnery by her father as punishment because she wished to marry Edward Rosier instead of a wealthier suitor. In this novel, a character who is dying of a lung disease convinces his father to leave half of his own inheritance to the protagonist, in order to grant her independence. Lord Warburton and Caspar Goodwood both propose to this novel's protagonist, who finds that her supposed confidante Madame Merle once had an affair with her husband, Gilbert Osmond. For 10 points, Isabel Archer is the title woman of what novel by Henry James?

ANSWER: *The Portrait of a Lady*

7. A G major piece in this genre begins with a short trill on B, followed by the notes E-D-B. Brahms's first piece in this genre incorporates a dotted figure from his songs "Regenlied" and "Nachklang," and his three compositions in this genre are in G Major, A Major, and D Minor. A lengthy F major *Andante con variazioni* is the second movement of an A major piece of this type originally dedicated to the mulatto George Bridgetower. Robert Schumann wrote the second and fourth movements of a piece in this genre on the letters "F-A-E." An A major work in this genre, whose final movement is in the style of a tarantella, was written by Beethoven. For 10 points, name this genre of ten Beethoven pieces, including ones nicknamed "Spring" and "Kreutzer," featuring a high-pitched string instrument.

ANSWER: violin sonatas [or equivalents like sonatas for violin and piano; prompt on sonatas]

8. A novel titled for one of these people, which ends after a collection of deformed fetus-like humanoids in tubes is revealed, involves Margaret Dauncey's seduction by the antagonist Oliver Haddo. Outside that W. Somerset Maugham novel, another man with this profession considers marrying the Catholic Emilia, but returns to his infertile wife Esther after his assistant Magda commits suicide; that character is Yasha Mazur. Unthinking obedience of fascism is symbolized by another of these men named Cipolla, who requests increasingly uncomfortable tasks until Mario assassinates him in a Thomas Mann novella. For 10 points, name this type of stage performer, one of whom lives in Lublin in an Isaac Bashevis Singer novel.

ANSWER: magicians [do not accept or prompt on any synonyms]

9. This opera begins with the cellos playing the half notes D-A-G-A. A 1946 recording of this opera, often considered to be definitive, features Jacques Jansen and Irène Joachim conducted by Roger Désormière. The third act of this opera begins with the female protagonist singing "Mes longs cheveux descendent," after which the male protagonist ties her hair to a willow tree. The opening line of this opera's female protagonist is the repeated "Ne me touchez pas!" That character in this opera claims to have lost her wedding ring while gathering shells with a child who later tries to lift a boulder to get his golden ball. This opera ends with the second title character dying after being wounded by Arkel's grandson, Golaud. For 10 points, name this opera based on a Maurice Maeterlinck play, by Claude Debussy.

ANSWER: Pelléas and Mélisande [or Pélléas et Mélisande]

10. Niklas Luhmann extended this thinker's analysis of a problem in which communication cannot occur between two people when they will both base their behavior on the other. That problem of "double contingency" leads to the necessity of stability in this man's theory of interaction between ego and alter. Social choices are made using five axes, including the range between affective neutrality and affectivity, in this man's theory of "pattern variables." Systems must fulfill integration, latency, goal attainment, and adaption according to this man, whose *The Social System* introduced the AGIL paradigm and pioneered structural-functionalism in sociology. For 10 points, name this American sociologist who formulated the "unit act" as part of the action theory presented in his *The Structure of Social Action*.

ANSWER: Talcott **Parsons**

11. A song written in response to this event repeats the line, "Don't make them have to take it away," and was banned from domestic airplay. After Home Secretary Reginald Maudling spoke about this event at the House of Commons, Bernadette Devlin was suspended for slapping him in the face. In 2007, Mike Jackson admitted some complicity in this event, at which he was second-in-command to Derek Wilford. The Saville Report accused Martin McGuinness of supplying nail bombs found at this event, whose perpetrators were exonerated by the Widgery Tribunal. Starting as a march to the Guildhall at Derry, this event occurred after the First Battalion of the Parachute Regiment went into Bogside. For 10 points, name this 1972 incident in Northern Ireland during which British troops fired on civilians.

ANSWER: **Bloody Sunday** of 1972 [accept **Bogside** Massacre before mention]

12. One poem by this author declares that while Luna "had never proved / How vain a thing is mortal love," the addressee has proven the truth: "Thou hast been, shalt be, art, alone." Another poem by this author declares that "with echoing straits between us thrown / ... We mortal millions live alone." The speaker of a poem by this man describes his "foot less prompt to meet the morning dew / The heart less bounding at emotion new." This author of the Marguerite poems used the line "Are ye too changed, ye hills?" to open an elegy mourning Arthur Hugh Clough. He described "the long, withdrawing roar" of the "Sea of Faith" in a poem that claims that "Sophocles long ago" heard the same sound "on the Aegean." For 10 points, name this Victorian poet of "Thyrsis" and "Dover Beach."

ANSWER: Matthew **Arnold**

13. An interlude about mining which interrupts this man's story states that wisdom "cannot be valued with the gold of Ophir." A 1952 book, which claims the Sophia archetype helped God attain self-consciousness by incarnating as Jesus, is Carl Jung's *Answer to this man*. This man asks if he has stone strength or brass flesh shortly before saying his "brethren have dealt deceitfully as a brook." A voice tells this man to "gird [his] loins" from within a whirlwind, asking him "where wast thou when I laid the foundations of the Earth?" This man gets rotating advice from Eliphaz, Bildad, and Zophar after his estate in Uz is destroyed and he is struck with boils due to a bet between God and Satan. For 10 points, name this pious namesake of an Old Testament book who nearly loses his faith in agony.

ANSWER: **Job** [or **Iyyov**; accept *Answer to **Job***]

14. This group claims that they are "unstable like Chernobyl" in a song whose hook is hummed while a female backing vocalist says things like "Earth, Jupiter, Mars" and "It's who you are." In another song, this group declares that they're "forever hollerin' 'Hootie hoo'" when they see cops. Besides "Millennium" and "Slump," this group warns "don't pull the thang out, unless you plan to bang" in one song, and claims in another that "mighty fine only got you somewhere half the time." They addressed a song to a girl who "like to thank [her] shit don't stank" and begins with the cry "Caroline!" This group behind "B.O.B." and "Roses" sang "I never meant to make your daughter cry" in a song addressed to "baby mamas' mamas." For 10 points, name this Atlanta hip hop duo which recorded "Ms. Jackson" and "Hey Ya."

ANSWER: **Outkast**

15. The "March of" this object titled a rabidly imperialist campaign speech by Indiana senator Albert Beveridge after the Spanish-American War. A photograph of a white anti-busing protestor in Boston using one of these objects to attack a black lawyer earned Stanley Forman a Pulitzer Prize. The phrase "Does the Constitution follow [*this object*]?" is a common summary of the Insular Cases which arose from the occupied Philippines and Puerto Rico. "Expressive conduct" with one of these objects outside the 1984 Republican National Convention in Dallas was protected in the case *Texas v. Johnson*. This object appears on Mount Suribachi with five soldiers in Joe Rosenthal's photo of Iwo Jima. For 10 points, name this symbolic object to which American school children pledge allegiance. ANSWER: American **flag** [or the **stars and stripes**; or **Old Glory**; prompt on "flagpole"]

16. A poem written in this language is addressed to those who inspired a "face that bends / over the altar of white paper." A second poem in this language is set in an "inert town" and opens many stanzas with "At the end of daybreak." In a novel in this language, set during forty days of seclusion after the narrator's husband dies of a heart attack, Mrs. Fall writes *So Long a Letter*. Another author used this language for "Prayer to the Masks," a poem in his *Shadow Songs*. Mariama Ba wrote in this language, in which a Shakespeare adaptation includes the demand "Call me X!" from the slave Caliban. For 10 points, identify this language in which *Notebook of a Return to the Native Land* exemplifies the anti-colonial *Négritude* movement of Leopold Senghor and the Martinique-born Aimé Césaire. ANSWER: **French** [or **français**]

17. An Italian merchant named Giannino Baglioni claimed to be a member of this dynasty, but was captured on the march and died in prison in Naples. Princesses from this dynasty accused their sisters-in-law of infidelity in the Tour de Nesle Affair, which took place during the reign of a king who won the Battle of Mons en Pévèle to avenge a previous loss. Kings of this dynasty sent Andrew of Longjumeau and Rabban ben Sauma to set up an alliance with the Mongols, and it lost the Battle of the Golden Spurs. This dynasty also included a son of Blanche of Castile who was captured at the Battle of Fariskur during the Seventh Crusade, and who built the *Sainte Chapelle*. For 10 points, name this French dynasty that included Philip IV and Louis IX, which was founded in 987 by Hugh. ANSWER: House of **Capet** [or **Capetians**]

18. These entities are a solution to a three-dimensional wave equation which itself is defined on the curl of the vector field of strain displacement. Because of this, their propagation obeys the continuity equation for incompressible media, and they cause no changes in volume. According to the Adams-Williamson equations, these waves have velocity equal to the square root of the shear modulus over the mass density. These waves can give rise to Love waves through interaction with a low-velocity surface zone. These waves cannot cross the Gutenberg core-mantle discontinuity; hence, their shadow zones after earthquakes provided evidence for a liquid outer core. For 10 points, name these transverse body waves generated during an earthquake that arrive after P-waves. ANSWER: **S-wave** [or **secondary waves** or **shear waves**; prompt on "transverse waves"]

19. A 2012 interactive installation by Ann Hamilton featured 42 of these objects moving a large white curtain at the Park Avenue Armory. In a painting by Renoir, a man in a suit stands left of one of these objects opposite from a woman whose white dress has a string of blue bows running down its front. A painting titled for one, set in a lush garden decorated with lion fountains, shows a woman in a pink dress on its lower right using a telescope. The Wallace Collection houses a work alternately titled for the "Happy Accidents" of these objects, which features a statue of a cupid holding a finger to its lips on the left. That painting shows a slipper flying off the foot of a lady dressed in pink as a man in the bushes peeks up her skirt. For 10 points, name this conveyance used in the most famous painting of Jean-Honoré Fragonard. ANSWER: **swings** [or **escarpolette**; or **balançoire**]

20. The Schiehallion experiment attempted to calculate the mean value of one example of this quantity by measuring a nearby mountain's effect on a pendulum. The time derivative of an operator named for this quantity is proportional to the commutator of the operator with the Hamiltonian, according to von Neumann. The expectation value of any observable of a system is equal to the trace of the product of the observable's operator with a matrix named for this quantity. For an electric field's energy, this quantity is given as vacuum permeability times electric field squared over two; for an ideal gas, it equals molar mass times pressure divided by the gas constant and temperature. For 10 points, name this value that can be measured using Archimedes' principle, which equals mass divided by volume.
ANSWER: mass **density** [or **density** of the Earth; or **density** matrix; or **density** operator; or energy **density**]

TB. This character recalls, "I fumbled to the window to experience the world" and states, "I have heard my Madness chatter before day," towards the end of a mostly excised passage called his "Pervigilium." This character describes "voices dying with a dying fall" and has a brief vision of "lonely men in shirt-sleeves, leaning out of windows" before describing a frightening vision of the "eternal Footman" holding his coat. This character compares himself to John the Baptist, Lazarus, and Prince Hamlet in succession after announcing, "I should have been a pair of ragged claws scuttling across the floors of silent seas." This character opens with the line, "Let us go then, you and I." For 10 points, name this aging title character of a dramatic monologue by T. S. Eliot called his "Love Song."
ANSWER: J. Alfred **Prufrock** [or J. **Alfred** Prufrock]

1. Answer the following about the history of chewing gum, for 10 points each.

[10] This city's ruling People's Action Party has banned chewing gum. During World War II, Japan's siege of this Southeast Asian city surprised it by invading on bicycles.

ANSWER: Singapore [or Xinjiapo]

[10] In exile after 10 terms as President of Mexico, this man brought the first shipment of *chicle* to the US; his secretary Thomas Adams then invented Chiclets. He carried out the Goliad massacre.

ANSWER: Antonio López de Santa Anna [or Antonio de Padua María Severino López de Santa Anna y Pérez de Lebrón]

[10] This 1822 atrocity spared skilled workers with a monopoly on producing *mastic*, an aromatic resin which the targeted place has produced for use as chewing gum since antiquity.

ANSWER: massacre at Chios [accept any answer indicating that the Ottoman empire killed thousands of civilian inhabitants of Chios]

2. This composer's last major compositions, Op. 166-168, are a trio of sonatas for oboe, clarinet, and bassoon, respectively. For 10 points each:

[10] Name this composer whose other compositions include an A minor cello concerto written for Auguste Tolbecque and five piano concerti.

ANSWER: Camille Saint-Saëns

[10] Saint-Saëns also composed this programmatic suite with movements including "Hens and Roosters," "Kangaroos," and "Tortoises."

ANSWER: *The Carnival of the Animals* [or *Le carnaval des animaux*]

[10] This frequently excerpted penultimate movement of *The Carnival of the Animals* is scored for two pianos and solo cello.

ANSWER: "The Swan" [or "Le Cygne"]

3. Shortly after the failure of this force, an opponent stated, "I have the body of a weak, feeble woman; but I have the heart and stomach of a king." For 10 points each:

[10] Name this force that was meant to be bolstered by an army under the Duke of Parma. The aforementioned quote comes from a speech delivered in response to this force to an assembly of troops at Tilbury.

ANSWER: Spanish Armada [or Grande y Felicísima Armada; or Invincible Armada]

[10] The Tilbury speech was delivered by this English monarch, who employed Francis Walsingham as spymaster and was excommunicated by Pius V in the bull *Regnans in Excelsis*.

ANSWER: Elizabeth I of England [prompt on "the Virgin Queen" or "Elizabeth Tudor"]

[10] England tried to capitalize on Spanish naval weakness by sending its own armada under the command of Sir Francis Drake and this man. This famous soldier had earlier carried out the English Fury at Mechelen.

ANSWER: Sir John Norreys [or Sir John Norris]

4. James Larkin White fervidly denies being the title character in this man's novel *I'm Not Stiller*. For 10 points each:

[10] Name this author who wrote about Walter Faber, a UNESCO engineer whose ultra-logical approach to life is shaken, in his novel *Homo Faber*.

ANSWER: Max (Rudolf) Frisch

[10] Max Frisch hailed from this European country, whose yearly "Dis da Literattura" festival honors writing in Romansh. Its foundational tales include William Tell.

ANSWER: Switzerland [or Swiss Confederation]

[10] A novel by Gottfried Keller about Henry, who gets nicknamed for wearing this color, is considered a masterpiece of Swiss realist fiction. In a poem, Lady Bertilak's husband wears this color.

ANSWER: green [or Green Henry; or the Green Knight; or *Der grüne Heinrich*]

5. In one holy text, this god notes how *sattva*, *rajas*, and *tamas*, three moods called *gunas*, inhere in sweet, bitter, and rotten food respectively. For 10 points each:

[10] Name this god who befriended his eventual lover Radha as a child among cowherds. He stopped time and revealed himself in his full splendor during a 700-verse dialogue on the field of Kuru.

ANSWER: **Krishna** [or **Krsna**; prompt on "Vishnu"]

[10] In this often independently-excerpted section of the *Mahabharata*, Krishna drives Arjuna's chariot and encourages him to return to battle.

ANSWER: ***Bhagavad-Gita*** [prompt on "Gita"]

[10] This student of Ramakrishna drew Western interest to Hinduism with his speech at the 1893 World Parliament of Religions in Chicago. In his monastic travels, he carried the *Bhagavad-Gita* alongside Thomas a Kempis's *Imitation of Christ*.

ANSWER: Swami **Vivekananda** [or Narendra Nath **Datta**]

6. The difference between the gross and net forms of this quantity is accounted for by plant respiration. For 10 points each:

[10] Identify this quantity, the rate at which autotrophs convert inorganic compounds into biomass.

ANSWER: **primary productivity** [or **primary production** rate]

[10] Mechanisms of primary production include photosynthesis and chemosynthesis. Many chemoautotrophs are archaea that produce this compound, the primary component of natural gas.

ANSWER: **methane** [or **CH₄**]

[10] These ecosystems located in littoral zones have the greatest primary productivity of all. *Spartina alterniflora*, a type of cordgrass native to the eastern coast of the Americas, is a species found in them that can become invasive.

ANSWER: **salt marshes** [prompt on **marshes**; prompt on **wetlands**; prompt on **estuaries**; prompt on **estuarine** ecosystems]

7. Paul Feyerabend's paper "Explanation, Reduction, and Empiricism" coined this term, applying it to the case of classical momentum and pre-Newtonian "impetus". For 10 points each:

[10] Name this property. If two or more theories have it, said theories cannot be defined in each other's terms or even used side-by-side within a larger framework of ideas.

ANSWER: **incommensurability** [or they are **incommensurable**; or **incommensurate**; or semantic **incommensurability**; or radical meaning **incommensurability**]

[10] Thomas Kuhn's book on *The Structure of these historical changes* notes that theories pre- and post- "paradigm shift" are often incommensurable. A notable one overturned geocentric cosmology for Newtonian physics.

ANSWER: **scientific revolutions** [accept *The Structure of Scientific Revolution*s]

[10] This Oxford political theory professor noted that different worthwhile values may also be incommensurable in his defense of pluralism. He distinguished the two concepts of positive and negative liberty.

ANSWER: Sir Isaiah **Berlin**

8. The 2014 winner of this award was a film by Duncan Campbell inspired by Alain Renais' *Statues Also Die*, and other winners have included sexualized pottery created by Grayson Perry. For 10 points each:

[10] Name this annual prize given to British visual artists under the age of 50 by the Tate. Tracey Emin's *My Bed* was shortlisted for this prize in 1999 but lost to a Buster Keaton-related video by Steve McQueen.

ANSWER: **Turner** Prize

[10] The namesake of the prize, J.M.W. Turner, created this painting of a battleship that had fought at Trafalgar being "tugged to her last Berth to be broken up."

ANSWER: *The **Fighting Temeraire** tugged to her last berth to be broken up, 1838*

[10] Turner's *Dido Building Carthage* was heavily influenced by this French painter's *Seaport with the Embarkation of the Queen of Sheba*. Widely praised for his landscapes, this man took his name from his home region.

ANSWER: Claude **Lorrain** [or Claude **Gellée**; accept **Claude**]

9. Answer the following about the geography of cheese in France, for 10 points each.

[10] This region lies just south of Lake Geneva and northwest of Italy's Piedmont. Delicious cheeses like Reblochon and Tomme are made here.

ANSWER: **Savoy** [or **Haute-Savoie**]

[10] Brie is made in the town Meaux in the Seine-et-Marne department. Meaux is in this city's metropolitan area, which makes up the majority of the Ile-de-France.

ANSWER: **Paris**

[10] The soft cheese Époisse is made in a namesake town in the department of Côte-d'Or in this region. Major cities in this region include Beaune and Auxerre, and it is home to the spectacular Arboretum de Pézanin.

ANSWER: **Burgundy** [or **Bourgogne**]

10. Wu and Yang theorized one type of these particles that solves the Yang-Mills field equations, and these particles are described by the Bogomolny equations. For 10 points each:

[10] Name these hypothetical elementary particles proposed by Dirac, which would consist of either a single north or a single south pole.

ANSWER: **magnetic monopoles** [prompt on "monopole"]

[10] If monopoles did exist, Gauss' law for magnetism would have this number multiplied by the magnetic charge density on one side of the equation, instead of zero. In the proper SI units, this number is 10 to the 7th times larger than the permeability of free space.

ANSWER: **4 pi** [or **4 times pi**]

[10] This Dutch physicist names a type of monopole with Alexander Polyakov. He won the Nobel in 1999 for work on renormalization of Yang-Mills fields by spontaneous symmetry breaking, together with Martinus Veltman.

ANSWER: Gerard '**t Hooft** [or Gerardus '**t Hooft**]

11. This theory was tested by injecting subjects with the vitamin "Superoxin," which was really just adrenaline. For 10 points each:

[10] Identify this psychological theory co-developed by Jerome Singer. It challenged the thalamic interpretation of Cannon and Bard, arguing for an intersection of physiological arousal and cognitive labelling.

ANSWER: Schachter **two-factor** theory of emotion [prompt on "Schachter"]

[10] With Carl Lange, this Harvard professor developed a model explaining emotions as reactions that follow after pure physical impulses. He also wrote *Principles of Psychology*.

ANSWER: William **James**

[10] Solomon and Corbit used this theory to explain how drug use becomes tied to emotional pleasure. It is based on, and named for, a theory that Ewald Hering derived for color vision.

ANSWER: **opponent-process** theory

12. The corpse of this object's creator is destroyed with acid by Alan Campbell, who has been blackmailed into performing the deed. For 10 points each:

[10] Name this object from a novel by Oscar Wilde. The man it depicts falls dead after stabbing it with a knife at the end of the novel in which it appears.

ANSWER: the **picture of Dorian Grey** [accept equivalents in place of "picture," such as "portrait" or "painting"]

[10] This artist paints Dorian Grey's portrait and presents it to him as a gift. This man is horrified at Dorian's increasing callousness, and Dorian stabs him to death after showing him how his portrait has aged.

ANSWER: **Basil** Hallward [or Basil **Hallward**]

[10] This contemporary English playwright showed the destruction of Oscar Wilde's reputation in his play *The Judas Kiss*. Susan Traherne longs for the excitement of her old life as a spy in this author's play *Plenty*.

ANSWER: David **Hare**

13. Answer the following about setbacks for the Austro-Hungarian royal family which presumably made Emperor Franz Joseph I a very sad man, for 10 points each.

[10] The Black Hand plotted this incident, in which Gavrilo Princip murdered a visiting Archduke in Sarajevo. This event was a primary catalyst for World War I.

ANSWER: assassination of Franz Ferdinand [accept answers including synonyms for assassination such as "murder," "shooting," etc.]

[10] Prussians used these innovative rapid-firing rifles to crush Franz Joseph I's army at Koniggrätz decades earlier. This gun was invented by Johann Nicolaus von Dreyse.

ANSWER: Dreyse needle-gun [or Zündnadelgewehr]

[10] In this 1889 incident, Franz Joseph's only son, Rudolf, murdered his mistress Mary Vetsera and then committed suicide, leaving Franz Joseph's brother Karl Ludwig as his heir.

ANSWER: Mayerling Incident

14. The Gigantes were born to this goddess when blood from Uranus's castration fell on her. For 10 points each:

[10] Name this goddess who also gave birth to Typhon. She personified the earth in Greek mythology.

ANSWER: Gaia [or Ge]

[10] Gaia was also the mother of these three giant deities, which were jailed in Tartarus along with the Cyclopes. After Zeus freed them, they helped defeat the Titans by throwing large numbers of rocks at once.

ANSWER: Hecatonchires [or Hekatoncheires; accept Hundred-Hands or other descriptive answers implying that these beings have a hundred arms/hands]

[10] Uranus set this she-dragon to guard the Hecatonchires in Tartarus. Her upper body was a snake-haired woman, she had vipers for feet, and for good measure she had the heads of fifty assorted animals growing out of her.

ANSWER: Campe

15. This film's final scene takes place under the gaze of a mural of Baudelaire painted on a building in the background. For 10 points each:

[10] Name this film about three marginalized French youths, one of whom named Vinz finds a police officer's gun in the aftermath of a riot that destroyed his friend Hubert's gymnasium. Its director, Mathieu Kassovitz, plays a skinhead in a climactic scene.

ANSWER: *La Haine* [or *Hate*]

[10] Kassovitz's silly early short *Fierrot le pou* plays on the title of *Pierrot le fou*, a film by this French New Wave director of *Breathless* and *Vivre sa vie*. Many of his early films feature defining performances by Anna Karina.

ANSWER: Jean-Luc Godard

[10] Godard's golden period in the 60s ended as he became increasingly obsessed with the ideas of this political thinker, who profoundly influenced the Dziga Vertov Group, of which Godard was a member.

ANSWER: Karl Marx

16. The Schottky and Frenkel types of these structures obey charge conservation. For 10 points each:

[10] Name these structures that come in stoichiometric and nonstoichiometric varieties. They can be specified by Kroger-Vink notation.

ANSWER: crystal defects

[10] This type of defect, which is unique to ice, occurs when a hydrogen bond has either an extra proton or no proton. Dislocations along a slip-plane in the ice structure produce pairs of these defects.

ANSWER: Bjerrum defect

[10] In metallic lattices, defects can increase this quantity, which also usually increases with temperature and multiplies current to give voltage in Ohm's law.

ANSWER: resistance

17. The Third Girl explains that she plans to "undo" the title character by whispering "Heavenly labials in a world of gutturals" in this author's poem "The Plot Against the Giant." For 10 points each:

[10] Name this American author who included such poems as "The Emperor of Ice Cream" and "Le Monocle de Mon Oncle" in his first collection, *Harmonium*.

ANSWER: Wallace **Stevens**

[10] This Harvard literary critic promoted Stevens' work in her book-length studies *On Extended Wings* in 1969 and *Words Chosen Out of Desire* in 1986. She feuded with UVA's Rita Dove.

ANSWER: Helen **Vendler**

[10] A chapter in Vendler's *On Extended Wings* addresses this Stevens poem. The section titles of this poem claim that the title artistic achievement "must be abstract" and "must give pleasure."

ANSWER: "**Notes Toward a Supreme Fiction**"

18. Ted Kennedy described this man's America as a future where women are "forced into back-alley abortions," blacks sit at "segregated lunch counters," and artists are "censored at the whim of government." For 10 points each:

[10] Name this man who became Richard Nixon's Solicitor General during the Saturday Night Massacre. He candidly affirmed his extreme right-wing views of constitutional law before the Senate in 1987.

ANSWER: Robert Heron **Bork**

[10] The Senate denied Bork's nomination to this body during Ronald Reagan's presidency. Anita Hill testified about sexual harassment from Clarence Thomas at his confirmation hearing for one of its nine seats.

ANSWER: **Supreme Court** of the United States [or **SCOTUS**]

[10] This non-Jew among the pro-FDR "Three Musketeers" was the first Supreme Court nominee to testify at a confirmation hearing. He became Chief Justice after his *Carolene Products* opinion upheld a ban on "filled milk."

ANSWER: Harlan Fiske **Stone**

19. These diagrams are often used to study the possible locations of fixed points for a system governed by a logistic map. For 10 points each:

[10] Name these diagrams on which forking from one possible value to two possible values to four, and so on, occurs as the value of r is increased.

ANSWER: **bifurcation** diagrams

[10] Bifurcation diagrams are used in the study of this phenomenon, which occurs when Lyapunov exponents are positive. The butterfly effect is an example of this phenomenon, often summed up as "extreme sensitivity to initial conditions."

ANSWER: deterministic **chaos** [or **chaos** theory]

[10] The ratio of the difference between successive r values for which bifurcations occur converges to this constant, whose value is approximately 4.67.

ANSWER: first **Feigenbaum** constant

20. Name these Argentine authors, for 10 points each.

[10] This blind author included the stories "Tlön, Uqbar, Orbis Tertius" and "The Library of Babel" in his collection *Ficciones*. He really loved infinite stuff and labyrinths a whole lot.

ANSWER: Jorge Luis **Borges**

[10] This friend of Borges wrote a novella in which a fugitive discovers that all the people on the island he inhabits are created by the title recording, *The Invention of Morel*. He appears as a character in "Tlön, Uqbar, Orbis Tertius."

ANSWER: Adolfo **Bioy Casares**

[10] This author of *On Heroes and Tombs* created a jailed protagonist who introduces himself as "the painter who killed Maria Iribarne" in *The Tunnel*.

ANSWER: Ernesto **Sabato**

21. A robot with a wooden leg waves a German flag next to another robot in a tuxedo with the words "1 2 3 Hurra" coming out of its head in this artist's *Republican Automatons*. For 10 points each:

[10] Name this German painter who created a painting dedicated to Oskar Panizza and placed a dollar sign over the title object in *Eclipse of the Sun*.

ANSWER: George **Grosz**

[10] This other painter depicted the Sun in her painting *Moses*, which also includes images of mitosis, fertilization, various historical figures, and a baby in the womb. This woman was married to Diego Rivera.

ANSWER: Frida **Kahlo** de Rivera [or Magdalena Carmen Frieda **Kahlo** y Calderón]

[10] The ash from an erupting volcano makes the Sun color the horizon with ash in this painter's *Cotopaxi*. The tiny detail of two people in front of a cross appears in this man's landscape *The Heart of the Andes*.

ANSWER: Frederic Edwin **Church**