

## ACF Regionals 2017

Edited by Andrew Hart, Stephen Liu, Benji Nguyen, Adam Silverman, Cody Voight, Nathan Weiser

Tossups by Maryland C (Yu Lu, Tanay Wakhare, Alex Echikson, Dash Yeatts-Lonske) and Toronto A (Aayush Rajasekaran)

1. In a 2011 book, Deborah Lipstadt argued that an earlier interpretation of this man mischaracterized him as “unaware.” In another book, this man was labeled a fanatical “joiner” who joined groups to define himself, and he was described as someone who battles language using self-invented clichés and stock phrases. This man’s claim that he had spent his life obeying Kant’s categorical imperative was rebutted by a philosopher who claimed that this man failed to recognize the fundamental “golden rule.” This man is the title subject of a 1963 book, originally written for the *New Yorker*, that is often reprinted showing him in a glass cage in a courtroom. A “report on the banality of evil” is titled after, for 10 points, what Nazi official whose trial “in Jerusalem” was analyzed by Hannah Arendt?

ANSWER: Adolf Eichmann [or Otto Adolf Eichmann; accept *Eichmann in Jerusalem: A Report on the Banality of Evil*]

2. In a story by this author, Jonathan converts his money into egg rashers, only to be robbed shortly thereafter. This author wrote a novel in which the protagonist is initially favored, but then imprisoned, by a man he calls “Wintabota,” or “destroyer of guns.” A novel by this author of “Civil Peace” includes the fable of a tortoise that grew wings and dined with the birds, only to be smashed when it tried to dive back to earth. In this man’s follow-up to that novel, Clara refuses to marry the protagonist, who studies law in England on a scholarship from a “progressive union” and accepts a bribe to pay for Clara’s abortion. For 10 points, what author of *Arrow of God* wrote about Obi in *No Longer at Ease* and created Obi’s grandfather, Okonkwo, in *Things Fall Apart*?

ANSWER: Chinua Achebe [or Albert Chinualumogu Achebe]

3. Industrially, this compound and hydrogen sulfide are removed during sweetening by using scrubbers treated with alkanolamines. Jeffrey Long’s group at Berkeley has pioneered the use of di-amine-modified Mg-D·O·B·D·C metal-organic frameworks to adsorb this compound. The Sleipnir project off the Norwegian coast collects this compound in deep saline aquifers. Enhanced coal bed methane recovery consists of flooding an unmineable coal seam with a supercritical fluid form of this compound. Stimulating a phytoplankton bloom in the open ocean with iron fertilization has been floated as a route to decreasing the concentration of this compound in the atmosphere. For 10 points, capture and sequestration of what anthropogenic greenhouse gas has the goal of mitigating global warming?

ANSWER: carbon dioxide [or CO<sub>2</sub>]

4. In Second Chronicles, this man writes a letter to King Jehoram of Judah, warning that God will kill Jehoram for leading the inhabitants of Jerusalem astray. Rabbinic interpretations of an incident involving this man on Mount Horeb are often cited as the reason a chair is set aside for him at the *brit milah*. In chapter nine of the Gospel of Luke, Moses and this man appear and converse with Jesus during the Transfiguration. In First Kings, this man summons fire on Mount Carmel, thereby proving the superiority of Yahweh over Jezebel. In the Book of Malachi, this man is prophesied to return before the Day of Judgment. For 10 points, name this biblical prophet who successfully challenged heathen priests before he was taken up to heaven in a flaming chariot.

ANSWER: Elijah [or Elias; or Eliyahu; or Ilyas; do not accept or prompt on “Elisha”]

5. A plaster sculpture that once stood in this building complex provided the name of its Courtyard of the White Horse. This complex includes a horseshoe-shaped double staircase designed by Jean Androuet du Cerceau (awn-droo-AY du ser-SOH). A bronze sculpture showing forest animals drinking water streaming from an urn illustrates the legend that a hunting dog named Bliaud (blee-OHD) discovered a spring at this complex; that bronze lunette sculpture shows a stag head protruding above the title water nymph and was created by Benvenuto Cellini as the tympanum for a gate at this palace’s entrance. Francesco Primaticcio (pree-mah-TEE-chee-oh) and Rosso Fiorentino were members of a school of Mannerist painters that formed at this palace at the invitation of Francis I. For 10 points, name this French palace complex to the southeast of Paris.

ANSWER: Palace of Fontainebleau [or Château de Fontainebleau]

6. In *Drosophila* (droh-SAW-fih-lah), the Loquacious protein activates this process by suppressing Stellate. Controls called “scramble” are most often applied in experiments using this process. A protein central to this process, which has a *piwi* (pee-wee) domain, was named because its *Arabidopsis* (ah-RAB-ih-DOP-sis) mutants look like octopi. This process, whose mechanism was first discovered in the genes *lin-4* and *let-27* (LIN-four and LET-27), increases the activity of cytoplasmic P bodies and is activated when Drosha binds to Pasha. This process progresses when the Argonaute nuclease, a component of the RISC (“risk”), processes the remnants of Dicer cleavage. Craig Mello and Andrew Fire won a Nobel for discovering the mechanism of this process in *C. elegans* (see eh-leh-ganz). For 10 points, name this technique that uses s·i·RNAs and m·i·RNAs to knock down a gene.

ANSWER: **RNA interference** [or **RNAi**; prompt on RNA silencing; prompt on gene knockdown or gene knockout or gene repression or similar answers]

7. While besieging Kerak (ker-ACK) on the day that a princess of this name married Humphrey of Toron, Saladin was convinced not to bombard the tower in which the newlyweds spent their wedding night. By marrying Yolande of Brienne (yoh-LAHND of bree-EN), who had this regnal name, Frederick II brought the Kingdom of Jerusalem into Hohenstaufen (ho-hen-SHTOW-fen) control. The inconclusive Battle of Toro won a woman with this name her countrymen’s support in a succession dispute against her half niece, Joanna la Beltraneja (zhoh-ah-nah la bel-trah-NAY-zhah); with her husband, that woman with this name expelled the Jews from her country in the Alhambra Decree and completed the *Reconquista* by conquering Grenada. For 10 points, give the name of the Castilian queen who sponsored Christopher Columbus and ruled Spain with her husband, Ferdinand of Aragon.

ANSWER: **Isabella** [accept **Isabella** I of Jerusalem or **Isabella** II of Jerusalem or **Isabella** I of Castile]

8. A poem by Richard Brautigan reimagines this event as a rape at the hands of “an evil fisherman who was dressed in clothes that had no childhood.” Upon learning of this event, a character offers to eat a crocodile and invites mountains to pile up over him so as to “make Ossa (oh-sah) like a wart.” Before this event, its central character claims that “you must wear your rue with a difference” and sings “hey non nonny, nonny.” This event occurs offstage when an “envious sliver” breaks off a willow that “grows aslant a brook,” as reported by Gertrude to the victim’s brother, Laertes (LAIR-teez). It occurs after a woman is driven mad by the death of Polonius and the behavior of a man who tells her to “get thee to a nunnery.” For 10 points, name this fatal event that befalls a young woman in Shakespeare’s *Hamlet*.

ANSWER: **death** of **Ophelia** [or **drowning** of **Ophelia**; accept answers implying that **Ophelia** has **died** or **drowned** or committed **suicide**]

9. In the *Odyssey*, Nestor relates that this man marooned a court bard on an island to be eaten by crows and seagulls. He was conceived when his mother, while washing clothes stained with the blood of a sacrificial ewe, was raped by a masked man, whose sword she managed to steal; as a child, this son of Pelopia (peh-LOH-pee-ah) was commanded to use that sword to murder a prisoner revealed to be his own father, Thyestes (“thigh”-ESS-teez), leading him to kill Atreus (AY-tree-us) instead. This man’s lover killed her husband by trapping him in a net and beheading him with an axe, motivated by anger at the sacrifice of her daughter Iphigenia; both that woman and this Mycenaean (my-SEE-nee-an) usurper were slain by Orestes, who was avenging his father. For 10 points, what lover of Clytemnestra seized power while Agamemnon was fighting at Troy?

ANSWER: **Aegisthus** [or **Aegisthos**]

10. In one painting, this artist showed a man wearing red pointing a pole forward as the title animal is transported across a river; that painting, *The White Horse*, was the first in this man’s series of large-scale “six-footers.” In a work painted after the death of his wife, Maria, he showed a rainbow extending over an ash tree and a building. Delacroix revised his *Massacre at Chios* (KEE-ose) after viewing the work of this artist, who painted a jarring blue-and-black background and a double rainbow in his depiction of *Stonehenge*, 1835. This painter of several views of Salisbury Cathedral created many depictions of the River Stour (stoor), including a painting that includes Willy Lott’s cottage on its left side. For 10 points, name this English Romantic painter of *Dedham Vale* and *The Hay Wain*.

ANSWER: John **Constable**

11. In an oligopolistic market, the time series plot of this value may take on a sawtooth shape as a result of dynamic equilibria, as predicted by the theory of “Edgeworth cycles.” In a paper on the “theory” of this value “and business behavior,” Robert Lowe Hall and Charles Hitch theorized that firms’ original decisions regarding this value explained the initial location of a “kink.” Unlike the Cournot model of oligopolies, the Bertrand model takes this value as the choice variable. The “kinked” demand curve was formulated to explain why this quantity, like wages, is sometimes “sticky.” A “taker” of this quantity lacks “market power,” which is the ability of an economic actor to set this quantity. For 10 points, name this quantity that is the payment demanded for a good or service.

ANSWER: **price(s)**

12. Nitrogen fixation is assayed by an experiment in which this compound is reduced. The polymer of this compound, doped with iodine, was the first conducting polymer discovered. Traditionally, Reppe ("REP"-puh) chemistry refers to carbonylation of this compound. This compound reacts with 1,3-butadiene ("one three" byu-tah-"DIE"-een) to give 1,4-cyclohexadiene in a Diels–Alder reaction. The dicyano derivative of this compound has the highest known adiabatic flame temperature. Calcium carbide reacts with water to form this compound, three moles of which can be combined to make one mole of benzene with no byproducts. This compound’s two protons each have a pK<sub>a</sub> around 25. It is usually the “fuel” in oxy-fuel cutting. For 10 points, name this compound with formula C<sub>2</sub>H<sub>2</sub> (C-2-H-2), the simplest alkyne, which is used in welding torches.

ANSWER: **acetylene** [or **ethyne**; accept C<sub>2</sub>H<sub>2</sub> before “C<sub>2</sub>H<sub>2</sub>”]

13. In a novel by this author, a man explains his intent to follow in the footsteps of a preacher who went into the wilderness to find his soul, only to discover that all he had was a “little piece of a great big soul.” Henry is surprised to find that his wife looks “strong” after she is visited by a tinker in a story by this author in which Elisa Allen takes pride in growing the title flowers. A novel by this author of “The Chrysanthemums” ends with a girl who has recently given birth to a stillborn baby smiling as she breastfeeds a starving old man in a barn; in that novel by this man, Jim Casy dies leading striking migrant workers, and Tom Joad’s family journeys to California. For 10 points, name this novelist who depicted the hardships of Dust Bowl-era tenant farmers in *The Grapes of Wrath*.

ANSWER: John **Steinbeck** [or John Ernst **Steinbeck** Jr.]

14. In the last of three 1941 speeches, a member of this organization spoke out against the state-driven forced euthanasia program *Aktion T4*. Julius Bachem (YU-lee-us BAH-kem) called for his party to weaken its association with this organization in the article “We Must Come Down from the Tower.” This organization smuggled and distributed a pamphlet titled “With Burning Concern,” or *Mit brennender Sorge* (ZOR-guh), to protest violations of the *Reichskonkordat* (RIKES-"concord"-aht), a treaty that guaranteed its rights. The Zentrum party represented this organization, which was especially powerful in southern Baden-Württemberg (bah-den-VURT-em-berg) and Bavaria. Adalbert Falk issued the May Laws to reduce this organization’s power as part of Otto von Bismarck’s *Kulturkampf*. For 10 points, name this organization that criticized Nazism under Pius XII ("the twelfth").

ANSWER: Roman **Catholic Church** [accept answers specifying the Roman **Catholic Church** in Germany; accept Roman **Catholicism**; prompt on “the **Church**” or similar answers]

15. In a speech given in the year of this election, a woman recounted getting beaten in the Montgomery County jail and said “I question America.” The winning side in this election aired the “Confessions of a Republican” ad. At the DNC before this election, Fannie Lou Hamer’s emotional testimony failed to convince party elites to seat the Mississippi Freedom Democratic Party. In an acceptance speech before this election, the Republican candidate declared that “extremism in the defense of liberty is no vice.” The quote “we must either love each other, or we must die” ended an ad that aired before this election and that began with a girl picking petals off a flower. The “Daisy” ad aired before, for 10 points, what presidential election in which Lyndon Johnson defeated Barry Goldwater?

ANSWER: U.S. presidential election of **1964** [prompt on “**64**”]

16. Fernando Vergara photographed female members of this group switching between their military uniforms and everyday clothing. A change in government policy regarding this organization was partly caused by the rise of BACRIM (bah-KREEM) bandit groups. A U.S. operation that mostly targets this organization controversially uses aerial fumigation to wipe out its main source of income. This group, which sometimes collaborated with the National Liberation Army, is currently led by a man who goes by the name Timochenko. Juan Manuel Santos won the 2016 Nobel Peace Prize for negotiating a peace treaty with this group, which was later renegotiated after the treaty was voted down by popular referendum. For 10 points, name this Marxist guerrilla organization in Colombia.

ANSWER: **FARC**–EP [or **Fuerzas Armadas Revolucionarias de Colombia**–Ejército del Pueblo; or **Revolutionary Armed Forces of Colombia**–People’s Army]

17. This man’s last symphony employs a “distant choir” of violins and harps that play in a separate rhythm from the rest of the orchestra in the finale; the third movement of that piece has a fugue based on this man’s first string quartet and was later arranged by his friend Bernard Herrmann. The first movement of another work by this man consists of the same 27 measures three times, though the violin and cello are silent for the first and second iteration, respectively. The song “Columbia, Gem of the Ocean” is quoted in this composer’s Second Symphony, his *Holidays* Symphony, and a piece with a movement titled “Putnam’s Camp.” A symphony called *The Camp Meeting* and the *Concord* Sonata are by, for 10 points, what American composer of *Three Places in New England*?

ANSWER: Charles **Ives**

18. This author wrote a play in an unconventional three-act form in which Hydaspes and Asaph ("high"-DASS-peeZ and AY-saf) are officers of King Ahasuerus (ah-hah-soo-AIR-us), who is convinced by the title character to stop a plotted massacre of Jews. That play by this man, *Esther*, includes extensive musical choruses, which he also used in a biblical drama in which a queen who worships Baal is killed when the high priest Joad (JOH-ad) brings Joash (JOH-ash) to power. In another play by this author, Hermione (AIR-mee-"own") vows to kill herself after Pyrrhus (PEER-us) dies, which results in Orestes going insane. This master of alexandrine verse described an illicit love affair between Aricie and Hippolyte (ar-ee-SEE and ip-oh-LEET) in a play in which the title character tells Theseus of her incestuous feelings. For 10 points, what French playwright wrote the tragedies *Athalie*, *Andromaque*, and *Phedre* (ah-tah-LEE, ahn-droh-MAHK, and FAY-druh)?

ANSWER: Jean-Baptiste **Racine**

19. A general from this country kept a mountain goat as his mascot and came to international prominence after giving an interview to German reporter Randolph Baumann. The fatal 1998 heart attack of this country’s dictator is called the “coup from heaven.” This country executed “Operation Tiger Claw” under a general nicknamed the “Black Scorpion.” Its first prime minister, Abubakar Balewa (AH-bu-bah-kar bah-LAY-wah), was overthrown in the “Revolt of the Five Majors.” This country was suspended from the Commonwealth of Nations after its dictator, Sani Abacha (SAH-nee ah-BAH-cha), ordered the execution of a man leading protests against environmental atrocities committed by Royal Dutch Shell. Ken Saro-Wiwa (sah-roh-WEE-wah) was executed in, for 10 points, what African country from which Igbo nationalists seceded to form Biafra (bee-AHF-rah)?

ANSWER: **Nigeria** [or Federal Republic of **Nigeria**]

20. The flux-freezing theorem can be derived from integrating the ideal version of this law for  $\mathbf{M} \cdot \mathbf{H} \cdot \mathbf{D}$ , which states that the electric field plus the velocity field crossed with the magnetic field equals zero. The proportionality constant for the microscopic version of this law is the electron density times the “square of fundamental charge” times the “mean free time between collisions,” all over mass, in the Drude (drudd) model. The microscopic analog of this law is that the current density equals the conductivity times the electric field. Diodes do not follow this law because their I–V curves are nonlinear; if the curves were linear, the slope would be the proportionality constant for this law. For 10 points, what law states that the voltage between two points in a circuit is equal to the current times the resistance?

ANSWER: **Ohm**’s law

TB. This number is the base of the  $q$  term that appears twice in Dedekind's eta (DAY-duh-kind's AY-tuh) function and that is known as the “nome” in number theory. This number is the base in the infinite sum that defines Jacobi's theta function. When this number is raised to the power of “pi times the square root of 163,” it is shockingly close to an integer and known as Ramanujan's (rah-MAHN-uh-jahn's) constant. In Stirling's approximation for  $n$  factorial, this number is raised to the minus  $n$ . For the limit as  $n$  goes to infinity, this number is equal to the  $n$ th power of the quantity “one plus one over  $n$ .” The Taylor series for “this number to the  $x$  power” is an infinite sum, from zero, of “ $x$  to the  $n$ ” over “ $n$  factorial” because the derivative of this number to the  $x$  power is still this number to the  $x$  power. For 10 points, what number, sometimes named for Euler, is approximately 2.718?

ANSWER: **e** [or **exponential**; accept **Euler**'s number or **Euler**'s constant before “Euler”]

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Bonuses by Maryland C (Yu Lu, Tanay Wakhare, Alex Echikson, Dash Yeatts-Lonske) and Toronto A (Aayush Rajasekaran)

1. The narrative of a long comic poem by this man is interrupted when Lilia sings of a soldier who is spurred on by “thy voice . . . thro’ rolling drums” to strike his foe dead “for thine and thee.” For 10 points each:

[10] Name this author whose long poem *The Princess* includes a refrain that laments “the days that are no more” and begins “tears, idle tears, I know not what they mean.”

ANSWER: Alfred, Lord **Tennyson** [or Alfred **Tennyson**, 1st Baron Tennyson]

[10] A third part of *The Princess* opens by noting that petals of these two colors are asleep, and that poem invites the addressee to “slip / into my bosom and be lost in me.” These colors appear in the title of a 2002 novel by Michel Faber (MEE-kell FAH-ber) that is set in the Victorian era.

ANSWER: **crimson** and **white** [do not accept any other colors; accept “now sleeps the **crimson** petal, now the **white**”; accept *The **Crimson** Petal and the **White***]

[10] In this Tennyson poem, an aging Greek hero eager for adventure states that “we are not now that strength which in old days / moved earth and heaven” and expresses his will “to strive, to seek, to find, and not to yield.”

ANSWER: “**Ulysses**”

2. The “remembered” one of these places titles a book by M. N. Srinivas in which he uses the term “Sanskritization” to describe how lower Indian castes emulate higher castes for social mobility. For 10 points each:

[10] Name this kind of place that another thinker used as a metaphor for how the globe has “contracted” with increased digital technology.

ANSWER: **villages** [accept global **village(s)** or *The **Remembered Village***]

[10] Srinivas studied under this Oxford anthropologist, who studied the Nuer (noo-“air”) and wrote *Witchcraft, Oracles, and Magic among the Azande* (ah-ZAHN-day).

ANSWER: E. E. **Evans-Pritchard** [or Edward Evan **Evans-Pritchard**]

[10] Evans-Pritchard studied the “ghost” type of this practice among the Nuer. In many cultures, dowries are exchanged as part of this practice.

ANSWER: **marriage** [accept ghost **marriage**; accept equivalents such as **wedding** or **nuptials** or **getting married**]

3. Han Wudi (woo-dee) commissioned Zhang Qian (jahng chee-AHN) to travel this route. For 10 points each:

[10] Name this trade route that connected China to Europe via Central Asia. Its overland portion passed through cities like Baghdad and Samarkand.

ANSWER: **Silk Road** [or **Silk Route**; or **Sichou zhi lu**; or **Tariq al-harir**]

[10] A so-called “Southern” Silk Road went from China to Bengal through Tibet, where Chinese merchants traded tea for this commodity. Chinese traders particularly valued “heavenly” ones that were useful in battle.

ANSWER: **horses** [accept Tibetan **pony** or **ponies**]

[10] This much earlier road extended from Bangladesh to northern India. Sher Shah Suri extended this road to Kabul by building through the Khyber Pass.

ANSWER: **Grand Trunk** Road [accept answers mentioning **Grand Trunk** and the concept of “road” or “highway”]

4. For graphs, this type of algorithm can be depth-first or breadth-first, both of which have a worst case performance of “big O of the number of vertices plus number of edges.” For 10 points each:

[10] Name this type of algorithm designed to find information stored in a data structure.

ANSWER: **search** algorithm [accept word forms such as **searching**; accept depth-first **search** or breadth-first **search**]

[10] The equivalent of a search algorithm for a tree is this operation that involves visiting every node in a tree. The three common types of this operation are pre-order, in-order, and post-order.

ANSWER: tree **traversal** [accept word forms of **traverse**]

[10] For a depth-first LTR traversal, give the order in which the root node and subtrees are visited for a post-order traversal.

ANSWER: **left** subtree, then **right** subtree, and then the **root** node [must be in exact order]

5. Two characters in this opera sing the friendship duet “Dio, che nell’alma infondere” (dee-oh, kay nell-AHL-mah in-fon-DAY-ray). For 10 points each:

[10] Name this opera whose third act ends with a massive auto-da-fé. An eyepatch-wearing princess tries to seduce this opera’s title character while singing the “Veil Song.”

ANSWER: **Don Carlos** [or **Don Carlo**] (composed by Giuseppe Verdi)

[10] The friendship duet “Au fond du temple saint” (“oh fawn” du TAWM-pluh SAHNT) is sung by Nadir and Zurga in this opera, in which Nadir and Zurga both love a priestess of Brahma named Leila.

ANSWER: *The* **Pearl Fishers** [or *Les* **pecheurs de perles**]

[10] This man composed *The Pearl Fishers*. The “Toreador Song” appears in his opera *Carmen*.

ANSWER: Georges **Bizet** [or Alexandre Cesar Leopold **Bizet**]

6. One of this man’s sonnets addresses “you who hear the sound in scattered rhymes.” For 10 points each:

[10] Name this poet who collected 366 love poems for Laura in his *Il Canzoniere*.

ANSWER: **Petrarch** [or Francesco **Petrarca**]

[10] Petrarch used hexameter to write this epic poem, which he considered to be unfinished. It describes the defeat of Hannibal at Zama.

ANSWER: **Africa**

[10] This 16th-century writer and his friend, Sir Thomas Wyatt, made pioneering translations of Petrarch and are credited with bringing the sonnet form to English literature.

ANSWER: Henry **Howard**, Earl of **Surrey** [accept either underlined portion]

7. This artist painted the title figures in a fishing boat being summoned by Christ in *The Calling of the Apostles Peter and Matthew*. For 10 points each:

[10] Name this contemporary of Giotto (JOH-toh) and possible student of Cimabue (chee-MAH-boo-eh). He was a pre-Renaissance Sienese artist who painted the *Rucellai* (ROO-chell-“eye”) *Madonna* and a *Maestà*.

ANSWER: **Duccio** di Buoninsegna (DOO-chee-oh)

[10] This much later artist’s *Cimabue’s Celebrated Madonna* actually depicts Duccio’s *Rucellai Madonna*. This 19th-century English artist painted a sleeping long-haired girl in an orange dress in his *Flaming June*.

ANSWER: Sir Frederic **Leighton**

[10] The *Rucellai Madonna* was inaccurately attributed to Cimabue by this Italian painter and early art historian, whose *Lives of the Artists* is the starting point of almost all Renaissance art scholarship.

ANSWER: Giorgio **Vasari**

8. This type of molecular orbital is represented by the dashed midline on a Frost circle. For 10 points each:  
[10] Name this type of molecular orbital that is exactly analogous to a single atomic orbital because it undergoes no orbital mixing. It is usually occupied by the lone pairs and often receives electrons during hyperconjugation.

ANSWER: **non-bonding** molecular orbital [or **n**; or **NMO**]

[10] In carbocations and radicals, the nonbonding molecular orbital is drawn from one of these atomic orbitals, which have two lobes and a dumbbell shape. At a given energy level, there are three of them, so they hold six total electrons.

ANSWER: **p** orbitals

[10] Hyperconjugation also explains why this cation is, by far, the most stable four-carbon carbocation, since its adjacent sigma electrons can all donate to the nonbonding MO.

ANSWER: **tert-butyl** carbocation [or **tertiary** carbocation; or **t-butyl** carbocation]

9. One philosopher used the term “clinamen” (klih-NAH-men) to articulate the “swerve” that affects these objects, thereby causing the indeterminate nature of the universe. For 10 points each:

[10] Name these objects that, according to Democritus, are the tiny, indivisible particles that make up the universe.

Answer: **atoms** [or **atomon**; accept **atomism** or other answers mentioning forms of the word **atom**]

[10] Lucretius used the concept of *clinamen* to defend the Epicurean doctrine of atomism in this six-volume philosophical poem.

Answer: ***De rerum natura*** [or *On the Nature of Things*]

[10] Aristotle rejected atomism, instead abiding by this position, which claims that all “being” is made from the combination of matter and form.

ANSWER: **hylomorphism** ("high-low"-morph-ism) [or **hylomorphism**; accept word forms such as **hylomorphic** or **hylomorphist**]

10. Steven Runciman published a three-volume history of these events, whose origins were examined by Carl Erdmann in his “habilitation thesis.” For 10 points each:

[10] Name these events whose modern-day historians include Thomas Asbridge and Christopher Tyerman.

Primary accounts of these events were written by William of Tyre and Guibert of Nogent (gee-"BEAR" of noh-ZAHN).

ANSWER: **Crusades** [accept any specific Crusades; prompt on more general answers such as “**religious wars**”; prompt on “**deeds of God through the Franks**”; prompt on “**deeds done beyond the sea**”]

[10] This British archaeologist and adventurer wrote his Oxford thesis on Crusader castles. This author of *Seven Pillars of Wisdom* returned to the Middle East during World War I to help with the revolt against the Ottomans.

ANSWER: T. E. **Lawrence** [or Thomas Edward **Lawrence**; or **Lawrence** of Arabia]

[10] This Lebanese-born French author used medieval Arabic sources as the basis for his nonfiction work *The Crusades through Arab Eyes*. This writer won the 1993 Prix Goncourt (PREE gahn-"CORE") for his novel *The Rock of Tanios*.

ANSWER: Amin **Maalouf**

11. Ellen Burstyn and Harvey Keitel are among the three joint presidents of this institution. For 10 points each:

[10] Name this pedagogical organization that was led for over 30 years by “method acting” proponent Lee Strasberg.

ANSWER: **Actors Studio**

[10] This man, who is the dean emeritus of the Actors Studio Drama School, is the host of the long-running TV interview program *Inside the Actors Studio*.

ANSWER: James **Lipton**

[10] This man is the third current joint president of the Actors Studio. He appeared as himself, and dated Adam Sandler in drag, in the film *Jack and Jill*, but he is likely better known for starring as Michael Corleone in the *Godfather* films and as Tony Montana in *Scarface*.

ANSWER: Al **Pacino** [or Alfredo James **Pacino**]



12. The final movement of a piece with this nickname is a tarantella in D minor, and its second movement features variations on a song its composer had written earlier. For 10 points each:

[10] Give this nickname of a piece that followed its composer's previous entry in the same genre, titled *Rosamunde*.

ANSWER: **Death and the Maiden** [or *Der Tod und das Mädchen*]

[10] *Death and the Maiden* is a string quartet by this composer of the *Trout Quintet* and the *Unfinished Symphony*.

ANSWER: Franz **Schubert**

[10] This final chamber work of Schubert contains his most famous adagio in its second movement. It was partially inspired by Mozart's work in the same genre and key.

ANSWER: **String Quintet** in C major

13. This man's reputation was destroyed when the St. Francis Dam collapsed hours after he had inspected it. For 10 points each:

[10] Name this civil engineer who designed the Los Angeles Aqueduct.

ANSWER: William **Mulholland**

[10] This mayor of Los Angeles worked with Mulholland to acquire the water rights required for the aqueduct. He secretly bought up much of the land that would be irrigated by the aqueduct, knowing that it would become profitable.

ANSWER: Frederick **Eaton** [or Fred **Eaton**]

[10] While Los Angeles took its water from the Owens Valley, this California city built an aqueduct to the Hetch Hetchy reservoir. It was almost destroyed by a massive 1906 earthquake.

ANSWER: **San Francisco**

14. Answer the following about Salman Rushdie, for 10 points each.

[10] Rushdie won the Booker Prize for this novel about the telepathic Saleem Sinai. It uses a cast of over 100 named characters to chronicle India's history from independence to the Emergency.

ANSWER: **Midnight's Children**

[10] Rushdie's *The Satanic Verses* opens with the actors Gibreel Farishta and Saladin Chamcha surviving one of these disasters, with Farishta taking on the persona of an archangel and Chamcha becoming a devil.

ANSWER: **airplane crash** [or **airplane explosion**; accept **airplane hijacking** or answers mentioning a **crash** or **explosion** or **hijacking** of a **jets** or **airliners** or other equivalents to "airplane"; prompt on less-specific answers such as "**air disaster**"]

[10] From 1988 to 1993, in the immediate aftermath of the controversy surrounding *The Satanic Verses*, Rushdie was married to this American author, whose novels include *John Dollar* and *Evidence of Things Unseen*.

ANSWER: Marianne **Wiggins**

15. In Sewall Wright's equilibrium model, a quantity symbolized by this letter multiplies the individual allele frequencies  $p$  and  $q$  and generally equals one-half to the  $N$ . For 10 points each:

[10] Name this letter that symbolizes the inbreeding coefficient as well as a dimensionless quantity that measures the difference between a population's heterozygosity and the product of  $2pq$ .

ANSWER: **F** [or **f**]

[10] If the  $F$ -statistic is zero, then this classic equilibrium model for population genetics holds. Its equation is usually written " $p^2 + 2pq + q^2 = 1$ ."

ANSWER: **Hardy-Weinberg** model [or **Hardy-Weinberg equilibrium**]

[10] In neutral theory, the mean heterozygosity is solely a function of the mutation rate and this quantity. This quantity is assumed to be infinite for the Hardy-Weinberg model to hold true.

ANSWER: **population** size [or population **size**; accept obvious equivalents; prompt on "**N**"]

16. This god's peacock mount was created when he hurled his spear, Vel, at the demon Surapadman, who had assumed the form of a mango tree and was split in two. For 10 points each:

[10] Name this Hindu god of war, a son of Shiva and Parvati. Even though he sped around the world three times, he still lost a race to his older brother Ganesha because Ganesha walked around their parents three times instead.

ANSWER: Kartikeya [or Murugan; or Skanda; or Subramaniam; or Guha]

[10] Kartikeya is often depicted with six of these body parts, symbolizing the five senses and the mind. One of these body parts that originally belonged to Ganesha was destroyed by Shiva and replaced with that of an elephant.

ANSWER: heads

[10] In the *Mahabharata*, Kartikeya is born from the wombs of, and nursed by, six deities who represent these objects. In Greek mythology, three of them were represented by Maia, Taygete ("tie"-GAY-tay), and Merope (MEH-roh-pee).

ANSWER: Pleiades [or Seven Sisters; or Krittika; prompt on "stars"]

17. In the Darcy–Weisbach equation, this quantity is proportional to the friction factor. For 10 points each:

[10] Name this value that has units of length and quantifies how much of a fluid's hydraulic energy is converted to thermal energy by friction between the moving fluid and the pipe wall.

ANSWER: head loss [or pressure loss; prompt on "loss"]

[10] The friction factor is most easily found using a Moody diagram, whose x-axis is the Reynolds number. The very left of a Moody diagram is thus for what regime of flow?

ANSWER: laminar flow [or streamline flow; or Stokes flow]

[10] The Reynolds number is defined as this quantity times characteristic velocity times characteristic length scale, all over viscosity. This quantity's SI unit is kilograms per meters cubed.

ANSWER: fluid mass density

18. A member of this dynasty was nicknamed "Apphus" for his diplomatic skill and was executed by Diodotus Tryphon after being lured to a meeting at Ptolemais (taw-leh-MAY-iss). For 10 points each:

[10] Name this dynasty that included Alexander Jannaeus (jahn-"EYE"-us), who was known as the "Thracian" and "furious young lion" for a barbaric tendency that he displayed by massacring thousands after a crowd threw citruses at him.

ANSWER: Hasmonean dynasty [accept Maccabean dynasty; do not accept "Maccabees"]

[10] Hasmonean rule over Judea was ended by this native of Idumea (ee-doo-MAY-ah), who had Roman support. In the Bible, this king orders the Massacre of the Innocents upon learning of the birth of Christ.

ANSWER: Herod the Great [or Herod I of Judea]

[10] This Roman general and politician ordered Gaius Sosius ("GUY"-us SOH-see-us), the governor of Syria and Cilicia (sih-LIH-shah), to help Herod conquer Jerusalem. This man's Donations of Alexandria bequeathed vast eastern territories to his children.

ANSWER: Mark Antony [or Marcus Antonius]

19. This text, which is divided into 117 chapters, details the meeting between the Queen of Sheba and King Solomon. For 10 points each:

[10] Name this text that details how Menelik I (meh-neh-lik "the first") brought the Ark of the Covenant to Ethiopia.

ANSWER: Kebra Nagast [or The Glory of the Kings]

[10] The *Kebra Nagast* is a holy text in this Jamaican religion, whose adherents venerate Haile Selassie (HIGH-lee seh-"LASS"-ee) and ritually smoke cannabis.

ANSWER: Rastafari [or Rastafarianism; accept word forms of Rastafarian]

[10] The *Kebra Nagast* was written in this ancient Semitic language, which was used by the Kingdom of Aksum and remains the liturgical language of the Ethiopian Catholic Church, although some sermons are conducted in modern Amharic.

ANSWER: Ge'ez (guh-EZ) [or Gǝʿǝz]

20. In this play, a former singer at the Blue Dragon nightclub asks the sheriff, Will, for his protection from a man whom the waitress Elma thinks looks like Burt Lancaster. For 10 points each:

[10] Name this “three-act romance” by William Inge (rhymes with “hinge”), which is set during a snowstorm that forces various travelers on the title vehicle to take shelter inside Grace Hoylard’s street-corner restaurant.

ANSWER: **Bus Stop**: *A Three-Act Romance*

[10] *Bus Stop*, like another play by Inge, *Picnic*, takes place in a small town in this state. In a novel by L. Frank Baum, Dorothy and her dog, Toto, are swept away from this state by a cyclone.

ANSWER: **Kansas**

[10] In *Bus Stop*, the aforementioned nightclub singer Cherie eventually decides to marry this cowboy and move with him to Montana. This character tries to fight Will and ends up getting handcuffed.

ANSWER: **Bo Decker** [accept either underlined portion]

Extra. This character says that he would gladly join Sisyphus in rolling a boulder up a slope if only, each time it rolled back down, he were given a line from Aeschylus’s lost play *Myrmidones* (mur-MID-un-eez). For 10 points each:

[10] Name this character, a recently deceased 77-year-old classicist who witnesses various scenes from his life as Charon ferries him across the River Styx in a play.

ANSWER: A. E. **Housman** [or Alfred Edward **Housman**; accept **A.E.** or **Alfred**]

[10] The fictionalized Housman is the protagonist of Tom Stoppard’s *The Invention of Love*, and the real Housman wrote this poetry collection, which includes “To an Athlete Dying Young” and “When I Was One-and-Twenty.”

ANSWER: A **Shropshire Lad**

[10] This Canadian author wrote a story in which a young woman agrees to read Housman’s “On Wenlock Edge” to Mr. Purvis while completely naked. Her collections include *Dance of the Happy Shades* and *The Moons of Jupiter*.

ANSWER: Alice **Munro** [or Alice Ann **Munro**]