

Valencia Delta Burke Invitational 2013  
Round 12

1. Oxygen production was dependent on this molecule in an experiment performed by Theodor Wilhelm Engelmann that used freshwater algae. Min Chen recently identified the "f" type of this molecule in stromatolites. Located in an organelle that is mainly in mesophyll cells, this molecule has a porphyrin ring coordinated to a central magnesium ion. A common experiment involves separation using paper chromatography of carotene, pheophytin, xanthophyll, and the "a" and "b" types of this molecule. Photosystem I contains a dimer of this molecule whose peak absorption is at 700 nanometers. For 10 points, name this green pigment located in the chloroplasts of plants.

ANSWER: chlorophyll

2. Benjamin Franklin printed one work in this genre by Boyrereau Brinch, who claimed to have previously been a prince of "Bow-Woo." Harriet Jacobs published a famous example of this genre, which also includes a work which begins with the author expressing his dismay that he'll never know his birthday and later chronicles his efforts to learn to read; that example was written by the man who founded the newspaper *The North Star*. FTP what are these works by Olaudah Equiano and Frederick Douglass which tell of experiences of enforced servitude?

ANSWER: slave narratives

3. The overture at the beginning of this work segues without break into its second song, in which the lines "It's a boy, Mrs. Walker, it's a boy" are repeated. The next song sees "The Lover" and "The Father" both aver that "'21 is going to be a good year"; The Father's murder of The Lover traumatizes this album's title figure, who later is sent to a woman who "will tear his soul apart," the Acid Queen. Later, the title figure's "crazy flipper fingers" help him master an arcade game on his way to becoming a messianic figure. FTP what rock concept album of 1969 features songs like "We're Not Gonna Take It" and "Pinball Wizard" about the titular "deaf, dumb, and blind kid," performed by The Who?

ANSWER: Tommy

4. Members of this empire were divided into kin groups known as ayllu [EYE-you]. This empire absorbed the Chimu civilization and used quipus [KEE-poos] for keeping records. The language Quechua [KECH-wah] was spoken by members of this empire, and Hiram Bingham rediscovered one of its cities. One ruler of this empire rebuilt a city in the shape of a puma, and another killed his half-brother Huascar [WAHS-kahr] and offered a room full of gold as a ransom to a conquistador. For 10 points, name this empire that was centered at Cuzco in present-day Peru, and was conquered during the reign of Atahualpa [ah-tah-WAHL-pah] by Francisco Pizarro.

ANSWER: Inca

5. The *Nihon Shoki* lists Kunitokotachi as the creator of this goddess. In the *Kojiki*, after she erroneously performed a mating ritual, she gave birth to two deformed children; they are not considered deities in their native canon. After abandoning them in a small boat at sea, she and her husband correctly performed the ceremony around Ame-no-mihashira. She then gave birth to eight islands and countless gods until dying during the birth of the fire god; her husband buried her in a mountain and killed the fire god, Kagutsuchi. FTP, name this Shinto goddess of creation and death, consort of Izanagi.

ANSWER: Izanami-no-Mikoto

6. The protagonist of this play learns from one character that flies make a buzzing sound because their butts are shaped like trumpets. That bit of wisdom in this play is provided by the leader of the Phrontisterion, who is first seen hanging from a basket in order to study the heavens. In this play, Socrates allows Strepsiades' son to be a student, but after Phidippides learns that beating his father is justified there, Strepsiades burns down the "Thinkery." FTP, name this ancient Greek play by Aristophanes that is set in the sky.

ANSWER: The Clouds or Nephelai

7. One team in this division suspended twenty-year-old tight end Austin Seferian-Jenkins one *entire* game for drunk driving. The son of Barry Sanders plays for another team in this division. Two teams in this division play for the Platypus Trophy in a rivalry game. One team in this division started the 2013 season with a 31-24 loss to Auburn, and another lost to FCS school Eastern Washington despite being ranked. De'Anthony Thomas is a running back and Marcus Mariota is a quarterback for a team in this division. Mark Helfrich succeeded Chip Kelly as head coach of that team in this division. For 10 points, name this division that includes Stanford and Oregon.

ANSWER: Pac-12 North [prompt on partial answer]

8. This letter names a data structure devised by Guttman that is a multidimensional version of a B-tree used to store spatial data. This letter names a type of selection that favors organisms such as rodents, which have a high reproductive rate. Along with S, this letter is used in organic chemistry to denote enantiomers. In math, this letter symbolizes the set that consists all of the rational and irrational numbers. This letter also names a value between negative one and positive one that was developed by Pearson and is used to determine if there is a linear correlation between two variables. For 10 points, name this letter that represents the gas constant in the ideal gas law.

ANSWER: R

9. Cardinal Hostiensis claimed that laws against this practice do not apply in the case of *lucrum cessans*. Cato and Seneca both compared it to homicide, but St. Anselm led a change in Catholic scholarship when he defined it as other than a simple "lack of charity." In Islam this practice is called *riba* and the Quran claims that God permits commerce but prohibits this practice, even with infidel, while Jewish law allows this practice with non-Jews. St. Thomas Aquinas defined it as the "charging of double payment." For 10 points, what is this practice, prohibited in most world religions, of charging excessive interest on loans?

ANSWER: usury [accept charging high interest rates or equivalent until the giveaway]

10. This document stated that anyone convicted of treason in a sovereign state was required to be extradited to other signatory states on demand. This document provided for a 9/13 majority to pass legislation. Another provision mandated that all military posts below general be selected by the states. Difficulties in recruiting troops to put down Shays' Rebellion helped point out weaknesses in this document, which also mandated that only individual states, and not the central government, could levy taxes. FTP, name this initial governing document of the American colonies that preceded the Constitution.

ANSWER: Articles of Confederation and Perpetual Union

11. Divided into eighteen regions called gobollada, it is home to a semi-desert plain known as the Guban. The Guban runs parallel to the Karkaar Range in this country's north. Home to only two permanent rivers, the Jubba and the Shabele, this nation is bordered by Djibouti in the northeast, Kenya in the southwest, and Ethiopia is to the west. Often known as the Horn of Africa and home to longest coastline on its continent, FTP, name this country with capital at Mogadishu, famous for contemporary piracy.

ANSWER: Somalia (Also: Somali Republic)

12. This real-life figure was parodied in Philip Roth's *Our Gang* as saying he was against sex itself. This figure is sodomized by the allegorical "Uncle Sam" at the end of Robert Coover's novel *The Public Burning*, which he narrates. Ralph Steadman depicted this figure as Godzilla, clutching a Viet Cong soldier in one claw, in a drawing collected in Hunter Thompson's book *Fear and Loathing on the Campaign Trail '72*. FTP who is this figure depicted in Ishmael Reed's *The Freelance Pallbearers* signing autographs for wounded war veterans with his dog Checkers and wife Pat, a former president of the US?

ANSWER: Richard Nixon

13. This thinker wrote one work about a friend of Sheik Mehtab who attempted suicide by eating belladonna seeds because he could not smoke cigarettes openly. That work analyzes the "leverage of truth" and is about the "origins of militant nonviolence." This author of *Gandhi's Truth* and *Young Man Luther* wrote about the conflict between intimacy and isolation in *Childhood and Society*. For 10 points, name this coiner of the term "identity crisis," who created an eight-stage model of psychosocial development.

ANSWER: Erik Erikson

14. Along with a German, this man names a phenomenon caused by a velocity discontinuity across a vortex sheet. This man's brother James predicted that pressure would lower the melting point of ice. This man obtained his first patent for the siphon recorder. He also patented the mirror galvanometer around the same time that he was involved in laying the transatlantic telegraph cable. The triple point of water is used to define a unit named for this man. For 10 points, name this British scientist who names an absolute temperature scale and the SI unit of temperature.

ANSWER: Lord Kelvin [or William Thomson; or 1st Baron Kelvin]

15. Sidney Reilly was killed in this nation after being duped by the OGPU during Operation Trust. This nation has been accused of perpetrating the Holodomor. One leader of this country appointed the "Bloody Dwarf" as the head of his secret police after ordering the Trial of the Twenty One during the Great Purges. This nation's early history saw the replacement of the New Economic Policy with the Five Year Plans. This country invaded Manchukuo after winning the Battle of Stalingrad during World War II. For 10 points, name this former superpower that was founded after the 1917 Russian Revolution, and was led for over thirty years by Joseph Stalin.

ANSWER: Union of Soviet Socialist Republics [or Soviet Union, prompt on "Russia"]

16. This man wrote a response to a book in which the author argued that a certain type of behavior is best understood through 'functional analysis.' Also naming—along with Marcel-Paul Schutzenberger—a theorem that finds the number of words of a given length that could be strung together through ambiguous grammar, this man responded to B.F. Skinner's *Verbal Behavior* with a radical theory. Introducing concepts such as 'universal grammar' and 'language acquisition device,' FTP, name this MIT linguist who famously wrote "colorless green ideas sleep furiously" in his *Syntactic Structures*.

ANSWER: Noam Chomsky

17. This artist's *Van Gogh's Painter on the Way to Tarascon* began his light period and his triptych, *May-June 1973* depicts the suicide of his lover, George Dyer. His allegorical work, *Painting*, used to feature a baboon but was painted over and now shows an ominous man with half a face behind a handrail standing in front of a flayed animal. Also the artist of *Study for Three Figures at the Base of a Crucifixion*, FTP, identify this painter who aped Velazquez's portrait of Innocent X in his *Screaming Popes* series.

ANSWER : Francis Bacon

18. In one novel by this author, the narrator finds 256 small wooden slips with unexplainable markings while excavating ruins in the desert. In another novel by this author, Anna is carried to a hospital in a wheelbarrow by her son, a gardener with a cleft lip. This man wrote a novel about a magistrate of the Empire and his encounter with the sunglass-wearing Colonel Joll, and wrote another novel in which an affair with a student causes David Lurie to lose his job. For 10 points, name this South African born author of *Waiting for the Barbarians*, *Life and Times of Michael K.*, and *Disgrace*.

ANSWER: J(ohn) M(axwell) Coetzee

19. This state saw the Westminister Massacre occur when a group led by a nearby state's judge tried to establish residence. An earlier effort to bring settlers from New York to this state led to an armed standoff at Breckenridge Farm where a militia of this state's residents, including Seth Warner, refused to allow settlement. One of the founders of this state commanded a group that captured Fort Ticonderoga. FTP, name this state whose militia was formed by Ethan Allen and was known as the Green Mountain Boys.

ANSWER: Vermont

20. Esters are formed from these compounds using the reagents tri-phenyl-phosphine and DEAD in the Mitsunobu reaction. These compounds are oxidized with a reagent consisting of chromium trioxide in dilute sulfuric acid and acetone. In the Williamson ether synthesis, an alkyl halide reacts with an alkoxide prepared from one of these compounds, which have sulfur analogs known as thiols. The secondary type of these compounds can be oxidized to ketones. For 10 points, name these compounds that have a hydroxyl group and are exemplified by methanol and ethanol.

ANSWER: alcohols

Valencia Delta Burke Invitational 2013  
Round 12 Bonuses

1. This nickname was given to rulers like Sancho I of Leon and Louis VI. FTPE:

[10] Sancho's grotesque exhibition of this nickname quality made him unable to ride a horse and led to his being deposed in 958.

ANSWER: the "fat" (or el craso or le gros)

[10] Louis the Fat was a member of this French royal dynasty founded by Hugh, which followed the Carolingians.

ANSWER: Capetian or House of Capet

[10] Sancho the Fat regularly fought against Spanish Muslims, who were known by this name in Europe.

ANSWER: Moors

2. One section of this work describes the author's useful theft of some pears. FTPE:

[10] What is this work written a little before 400 CE by the Christian thinker who wrote City of God?

ANSWER: Confessions (of Augustine)

[10] This son of Monica and resident of Hippo wrote the Confessions.

ANSWER: Saint Augustine

[10] In City of God, Augustine argues that human death is a punishment for this transgression.

ANSWER: Adam's eating from the tree of knowledge or the apple in the Garden of Eden  
(accept reasonable equivalents)

3. Robert Rauschenberg shocked 1950s audiences with a seven-panel painting uniformly of this color. FTPE:

[10] What is this color that also dominates a Suprematist work by Malevich which shows a square of this color on a field of this color?

ANSWER: white

[10] A "white" version of this scene by Marc Chagall depicts the suffering of Jews around the central figure who is on a white cross.

ANSWER: White Crucifixion

[10] Chagall is better known for this depiction of a human face looking into a goat face with lots of other stuff going on, including some upside-down broad milking a cow.

ANSWER: I and the Village

4. Z lines are the borders of these structures, which make up myofibrils. For 10 points each:

[10] Name these structures that are shortened when actin filaments slide across myosin filaments.

ANSWER: sarcomeres

[10] Sarcomeres are the basic contractile unit of the skeletal and cardiac types of this tissue. The sarcoplasmic reticulum is found in this tissue, and tendons join this tissue to bone.

ANSWER: muscles

[10] The band named for this letter corresponds to the length of the thick filament. This letter also names a site where transfer RNA molecules enters ribosomes during translation.

ANSWER: A

5. Mrs. Mingott has a stroke after being asked for support following the financial collapse of Julius Beaufort, and another character in this novel seeks a divorce from a Polish count. FTPE:

[10] Name this novel in which Newland Archer does not commit adultery with Ellen Olenska.

ANSWER: The Age of Innocence

[10] *The Age of Innocence* was written in 1920 by this woman, who also wrote *Ethan Frome*.

ANSWER: Edith Wharton

[10] Despite winning first prize in an archery competition, this cousin of Ellen Olenska is described by her husband Newland as "lacking in imagination" and "incapable of growth."

ANSWER: May Welland [accept either]

6. Answer the following about some recent scandals, for 10 points each.

[10] Some members of this agency were forced to resign after they brought prostitutes to a Colombia hotel. Members of this agency are responsible for protecting the President of the US.

ANSWER: Secret Service

[10] Jamie Dimon is the CEO of this company, whose employee, Bruno Iksil, was nicknamed the London Whale after losing over \$6 billion through transactions involving credit default swaps.

ANSWER: JPMorgan Chase [prompt on partial answer]

[10] A documentary aired after the death of this man, the host of the show *Jim'll Fix It*, exposing him as a pedophile. He shares his surname with a "Row" home to some of the best London tailors.

ANSWER: Jimmy Savile

7. Answer the following about the Kefauver Committee, even if you don't know what that is, FTPE.

[10] Estes Kefauver chaired a committee to investigate organized crime, interviewing crime bosses Frank Costello and Vito Genovese, and popularizing this word for Italian crime organizations.

ANSWER: mafia

[10] TV networks televising the hearings agreed not to film Frank Costello's face, leading the camera to instead focus on this other body part, which famously displayed his nervousness during questioning.

ANSWER: hands

[10] In 1956 Kefauver served as the VP candidate for this Democratic nominee, who lost the election to Eisenhower.

ANSWER: Adlai Stevenson

8. This son of Monoetius killed Sarpedon outside the walls of Troy but was killed soon after. FTPE:

[10] Who is this Greek who was killed by a Trojan warrior while wearing the armor of his "friend," Achilles.

ANSWER: Patroclus

[10] Patroclus was killed by this husband of Andromache, the greatest Trojan fighter.

ANSWER: Hector

[10] Patroclus's dead body was guarded from desecration by Odysseus and this Greek warrior; later, after Achilles's death, this hero commits suicide when Odysseus is given his armor.

ANSWER: Ajax

9. The “rude mechanical” Peter Quince is author of a play-within-a-play about Pyramus and Thisbe in this work. FTPE:

[10] What Shakespeare play features the marriage of Titania and Oberon and lots of magical hijinks?

ANSWER: A Midsummer Night's Dream

[10] Love-enchanted Titania falls for this other rude mechanical while he has been briefly transformed to have a donkey's head.

ANSWER: Nick Bottom

[10] Bottom got his donkey head from this fairy prince, also known as Robin Goodfellow.

ANSWER: Puck

10. This landmass existed approximately three hundred to two hundred million years ago. FTPE:

[10] Name this super-continent that eventually broke up into Laurasia and Gondwanaland.

ANSWER: Pangaea [or Pangea]

[10] The term Pangaea was coined by this German scientist, who proposed the theory of continental drift in 1915 in his work *The Origin of Continents and Oceans*.

ANSWER: Alfred Wegener

[10] The super-continent Pangaea was surrounded by this ocean.

ANSWER: Panthalassa [or Panthalassic Ocean]

11. For 10 points each, answer the following about religion in America.

[10] These periods of religious revivals during the 18th and 19th century involved itinerant Protestant preachers such as Johnathan Edwards and George Whitefield. The title of Joseph Tracy's influential history of the first of these phenomena gives them their name.

ANSWER: Great Awakenings

[10] This region, the epicenter of the Second Great Awakening located in Western New York, was given this name by Charles Finney referring to the absence of population left to convert by the fire-and-brimstone sermons of many of the Arminian theologies popular at the time.

ANSWER: Burned-over District

[10] These siblings told of "mysterious rappings" that they experienced in their home in Hydesville, New York located in the Burned-over district. Eventually, these women confessed that their table rappings and their status as spiritual mediums were a hoax.

ANSWER: Fox sisters

12. This man was ousted by his first mate, Fletcher Christian. FTPE:

[10] What captain of the HMS Bounty was put asea in a 20-foot launch and traveled 3600 miles to Timor?

ANSWER: William Bligh

[10] Bligh was deposed again, this time on land, during an 1808 rebellion known by the name of this drink, which Bligh's officers were selling illegally.

ANSWER: rum

[10] The Rum Rebellion took place in this southwestern Australian province, home to Sydney.

ANSWER: New South Wales

13. Answer the following about Clifford Geertz, even if you've never heard of him, FTPE:

[10] Geertz may be best known for an essay describing this type of avian bloodsport in which the contestants sometimes have razors attached to their claws.

ANSWER: cockfighting

[10] Geertz titled that essay on cockfighting with these two words, which he said described a type of game with stakes so high no rational person would engage in it.

ANSWER: Deep Play

[10] Geertz described differences between this religion as practiced in Morocco and Indonesia in a work titled for it "Observed."

ANSWER: Islam

14. Answer the following science bonus about fullerenes, for 10 points each.

[10] Fullerenes are composed entirely of this element, which also makes up diamond and graphite.

ANSWER: carbon [prompt on "C"]

[10] One molecule of buckminsterfullerene is composed of this number of carbon atoms. The bond angles between carbon-carbon bonds in cyclopropane is also this number of degrees.

ANSWER: sixty

[10] Buckminsterfullerene can act as an excellent dienophile and react with a diene in this doubly-eponymous cyclo-addition reaction from organic chemistry.

ANSWER: Diels-Alder reaction

15. This character is horrified by a dead Union soldier he stumbles upon in a forest glade. FTPE:

[10] Name this character who also witnesses the death of his friend Jim Conklin.

ANSWER: Henry Fleming

[10] Henry Fleming is the protagonist of this novel that is titled for the wound Henry believes will be a mark of a soldier's valor.

ANSWER: *The Red Badge of Courage*

[10] This story by Crane sees the Correspondent stuck in the title vessel with three other men after their ship sinks during the Spanish-American War.

ANSWER: "The Open Boat"

16. Lamonte Young was a teacher of many practitioners of this genre of music, including Steve Reich and Terry Riley. FTPE:

[10] What style of music characterized by spare and limited structures and instrumentation came into vogue in the 1970s.

ANSWER: minimalism

[10] This composer's "Shaker Loops" shows his roots in minimalism. You may know him better for his opera *Nixon in China*.

ANSWER: John Adams

[10] Terry Riley's best-known work is partly named for this key signature, which has no flats or sharps.

ANSWER: C major [or *In C*]



17. One work by this political cartoonist depicts members of the Tammany Hall political machine dropping children into a river infested with crocodiles resembling Catholic bishops. FTPE:

[10] Name this man employed by *Harper's Weekly* whose works led to the fall of Boss Tweed.

ANSWER: Thomas Nast

[10] Thomas Nast often used this large grey animal as a symbol of the Republic Party.

ANSWER: elephant

[10] A political cartoon critical of this act shows a turtle snapping at a merchant, who exclaims "This cursed O-grab-me." It was later replaced by the Non-Intercourse Act.

ANSWER: Embargo Act of 1807

18. Ferdinand Magellan was the first to mention a mythical race of people that supposedly were twelve to fifteen feet in height and lived in this region of South America. FTPE:

[10] First, name this most southerly region of South America which is shared by Argentina and Chile.

ANSWER: Patagonia

[10] Within Patagonia is this archipelago that is separated from the mainland by the Straits of Magellan. It is home to Ushuaia [*oo-SWAHY-uh*], the southernmost city on earth.

ANSWER: Tierra del Fuego [or Land of Fire]

[10] This South American river basin extends throughout an area of almost three million square miles and is located primarily in Brazil.

ANSWER: Amazon(ian) River Basin

19. Answer the following about hydrodynamics, or the study of fluids in motion, FTPE.

[10] Honey and molasses have high values for this quantity, a fluid's resistance to flow. This quantity, which is analogous to friction, can be measured in stokes or poise [*PWAHZ*].

ANSWER: viscosity

[10] This seven-letter word is used to describe fluid flow that is smooth and orderly. This type of flow occurs at low Reynolds numbers, and is often contrasted with turbulent flow.

ANSWER: laminar

[10] Ludwig Prandtl developed the concept of these narrow regions in fluids that are adjacent to solids. Viscous effects dominate in these regions, which have very large velocity gradients.

ANSWER: boundary layers [or grenzschicht]

20. This author depicted the tribulations of the Neanderthals Lok and Fa as they are hunted down by some *Homo sapiens* in his novel *The Inheritors*. FTPE:

[10] Name this British author of *The Spire*, who also documented the turn to savagery of a group of young survivors of a plane crash in a 1954 novel.

ANSWER: William Golding

[10] This novel by William Golding depicts the savage behavior of boys on an island; the title figure is a pig's head on a stick.

ANSWER: Lord of the Flies

[10] In *Lord of the Flies*, this boy opposes Ralph's leadership and leads the hunt for Ralph that leads to Piggy's death from a fall.

ANSWER: Jack