

Valencia Delta Burke Invitational 2013  
Round 9

1. This quantity is plotted on the y-axis of the Mollier diagram. The negative of the change in this quantity is divided by the square of the temperature in the Gibbs-Helmholtz equation. This quantity minus the product of temperature and entropy equals Gibbs free energy. Its change for an overall reaction equals the sum of the changes of each step according to Hess's law. The change in this quantity is negative in an exothermic reaction. For 10 points, name this quantity symbolized H that is equal to the internal energy of a system plus the product of pressure and volume.

ANSWER: enthalpy [prompt on "H"]

2. Sound engineer Kurt Munkacsi was an integral part of this composer's namesake ensemble, processing Farfisa organ lines through a mixer in this composers early 1970s work *Music in Twelve Parts*. The "Hymn to the Sun" in the third of this composer's "Portrait Trilogy" of operas is directed to always be sung in the language of the audience attending. That opera, *Akhmaten*, followed *Satyagraha* by this composer and a previous opera including a third part called "Field/Spaceship" and broken up by "Knee Plays." FTP what minimalist composer wrote the opera *Einstein on the Beach*?

ANSWER: Philip Glass

3. One author of this surname satirized attitudes toward the Mexican-American war in a work showcasing letters from Birdofredum Sawin to the title character in *The Biglow Papers*. That Fireside Poet was first cousin to the author of "Patterns," an Imagist poet whose work Ezra Pound derided as "Amygism." Another member of this family carried on a famous correspondence with the poet Elizabeth Bishop and described "Colonel Shaw . . . riding on his bubble" in a poem describing Augustus St. Gaudens' "shaking relief" of Black Civil War soldiers. FTP what family included James Russell, and Robert, the latter the author of "For the Union Dead" and "Skunk Hour"?

ANSWER: Lowell

4. In the opening battle of this war, artillery at Turtukai were used to push forces under PA Dannenburg from Oltenitza. Another battle began after Michael Gorchakov sent his generals a note reading, "Let's start it." That battle at the Chernaya was part of a larger siege during this war that included assaults on Alma, Inkerman and a fort called the Great Redan. Marechal Canrobert allied with Lord Raglan at another battle during this war which included an action called the "Thin Red Line." The battles of Balaclava and Sevastopol took place during, for 10 points, what war between Russia and a French-British-Ottoman alliance?

ANSWER: Crimean War

5. In one story associated with this figure, the flying chariot Pushpaka is devoured alongside the entirety of the wealth of Lord Kubera until this god could be satiated. As Vighnaraja, this deity defeated the demon Mamtasur while riding his serpent mount, Sheshnag, and his second form broke a tooth during a skirmish with Parashurama. His father was said to have delivered to this figure the head of Gajasura, while in a later tale he would collaborate with Vyasa on penning the *Mahabharata*. FTP, identify this Hindu deity, the Remover of Obstacles, a son of Shiva and Parvati commonly depicted with the head of an elephant.

ANSWER: Lord Ganesha [also accept Ganesa, Ganesh, Pillaiyar, Ganapati, or Vinayaka]

6. The two-pound coins of this political entity have changed annually to depict different images of the 12 labors of Hercules. The town of La Linea de la Concepcion lies on the northern border of this political entity, serving as the major tourist entry point to this entity's most popular tourist destination. That landmark in this entity is home to a population of semi-wild macaques, its namesake "apes." Home to a 1400-foot limestone monolith originally considered one of the Pillars of Hercules, FTP what is this British Overseas Possession at the southern tip of Spain known for its namesake "Rock"?

ANSWER: Gibraltar

7. Synthetic varieties of this mineral were made by Auguste Verneuil using the flame-fusion process. Asterism in this mineral is caused by the inclusion of rutile. One variety of this mineral has a shade known as Kashmir blue, and another variety has a shade called pigeon's blood. The material emery consists of magnetite and this mineral. Aluminum oxide occurs naturally in large deposits as this mineral, which has a value of nine on the Mohs scale of hardness. For 10 points, name this mineral whose transparent varieties, such as sapphire and ruby, are used as gems.

ANSWER: corundum

8. A dog named Mister Mars is stolen from the flat of Sammy Starfield in a novel set in this city that centers on the adventures of Finn and Jake, Iris Murdoch's novel *Under the Net*. Tobias Oates describes a man looking for Henry Phipps in another novel set in this city. That Peter Carey work about Jack Maggs is a reworking of a novel set here about an apprentice of Joe Gargary, who sees the death of Abel Magwitch. This home of Pip in *Great Expectations* is also the setting of a work that provides an eyewitness account of events like the Second Dutch War and the Great Fire. For 10 points, name this city, the home of diarist Samuel Pepys [Peeps].

ANSWER: London

9. A music video for this artist opens with an over-sized pair of scissors cutting off an ankle bracelet and also features a skull made of French fries. In one song, this artist observes "It's definitely not a Nashville party / Cause all I see are stilettos / I guess I never got the memo." In another song, this artist ponders "Can't you see it's we who own the night?" In a more recent song, this artist exclaims "I came in like a wrecking ball." For 10 points, name this twerking obsessed singer of "Party in the U.S.A." as well as "We Can't Stop," and who used to portray Hannah Montana.

ANSWER: Miley Cyrus

10. It was in this US state that William Miller and his followers suffer the "Great Disappointment," the failure of Jesus to return on Miller's schedule. Martin Harris was a resident of this state when he served as a scribe to a man who translated the "reformed Egyptian" on golden plates found buried on a hill in this state. FTP Joseph Smith claimed to find the Book of Mormon after finding those golden plates in Palmyra near the Finger Lakes in what state?

ANSWER: New York

11. This company's founder preceded it with the South Improvement Company, which attempted to collude with three major railroads to fix rates. One political cartoon depicted this company as a two-headed snake featuring protectionist Nelson Aldrich and this company's founder being strangled by Teddy Roosevelt. A better-known cartoon depicted this organization holding the steel and copper interests, as well as congress and the White House, in its tentacles. A major work on this company was serialized in McClure's Magazine and was written by Ida Tarbell. FTP what company was forced to dissolve in 1911, creating companies like Chevron and Mobil, founded by John D. Rockefeller?

ANSWER: Standard Oil

12. One work by this artist depicts a servant washing the feet of Bathsheba, who is holding a letter from King David in her right hand. This man's only seascape, which was stolen from the Isabella Stewart Gardner Museum, is set on the Sea of Galilee and depicts Christ about to calm a storm. One painting by this man includes a girl in a yellow dress with a chicken. The corpse of Aris Kindt is seen in another work by this man, who often depicted Titus, his son, and Saskia, his wife. One work by this artist depicts the company of Frans Banning Cocq, and another shows Nicolaes Tulp performing an anatomy lesson. For 10 points, name this Dutch painter of *The Night Watch*.

ANSWER: Rembrandt Harmenszoon van Rijn

13. This thinker responded to Daniel Brinton's use of evolutionary theory to demonstrate alleged linguistic inferiority in his paper "On Alternating Sounds". Robert Lowie used the metaphor of "shreds and patches" to illustrate one of this man's theories. He observed Inuit migrations while doing post-doctoral research in geography on Baffin Island. This thinker denied linguistic relativism in a work that derived in part from his research among the Kwakiutl Indians. He wrote *The Mind of Primitive Man* and taught Alfred Kroeber, Ruth Benedict, and Margaret Mead. For 10 points, name this Columbia professor considered the father of American anthropology.

ANSWER: Franz Boas

14. A method to calculate the distance between two sequences that only assumes this process is the Cavalli-Sforza chord measure. One model of this process that assumes overlapping generations is named for Moran, and is an alternative to the Wright-Fisher model. Kimura's neutral theory states that this process is the cause of evolutionary changes. Examples of this evolutionary mechanism include the founder effect and the bottleneck effect. The causes of micro-evolution include mutations, natural selection, gene flow, and this process, which has an increased impact in small populations. For 10 points, name this random change in the frequency of alleles in a gene pool.

ANSWER: genetic drift [or allelic drift before mentioned; prompt on "drift"]

15. Roman Emperor Trajan had a bridge constructed across this body of water in 105 CE to ease passage of troops to Dacia; that bridge was built near the "Iron Gates" gorge on this river. Bridges connecting Kosovo to areas in Serbia over this river were destroyed by NATO bombing in 1999. The 1829 Treaty of Adrianople gave Russia dominion over shipping on this river, taking control of its eastern course from the declining Ottoman Empire. Running through ten European nations, FTP what river rises in the Black Forest and passes through Vienna, Bratislava, Budapest, and Belgrade?

ANSWER: Danube River

16. In one novel by this author, World War I veteran Shadrack institutes National Suicide Day; that novel's title character's last name is Peace, and she reunites with her friend Nel at novel's end. At the beginning of another novel by this author, an insurance agent who hopes he can fly with plastic wings jumps to his death from "No Mercy Hospital" a day before Ruth gives birth to the novel's protagonist Milkman Dead. Her best known novel depicts a haunting at 124 Bluestone before the title girl comes to Sethe's home. FTP what African-American novelist wrote *Sula*, *Song of Solomon*, and *Beloved*?

ANSWER: Toni Morrison

17. In this state in 1914, two women and eleven children who suffocated in a pit under a tent that was set afire were among the many miners and labor activists killed by company guards in the Ludlow massacre. In what is now this state, troops under Colonel Thomas Chivington killed over 100 friendly Arapaho and Cheyenne people led by Black Kettle in the Sand Creek massacre. Six striking workers were killed and dozens injured in a 1927 incident in which police fired on activists with machine guns in the town of Serene in this state in the Columbine Mine Massacre. FTP in what state did Eric Harris and Dylan Klebold kill 12 students and a teacher in a high school also called Columbine?

ANSWER: Colorado

18. A distinction between whether actions or common laws best create ideal conditions lead to the "act" and "rule" positions within this philosophical school. Characteristics like "fecundity," "intensity," and "extent" should be measured before one acts according to the "hedonic calculus" posited by this movement's founder, Jeremy Bentham. FTP John Stuart Mill wrote a book titled for what philosophy, which argues that one's actions should minimize suffering and maximize happiness?

ANSWER: utilitarianism

19. This phenomenon is described on the atomic scale by the Prandtl-Tomlinson model and also names a dimensionless factor in the Darcy-Weisbach equation. A law named for Guillaume Amontons states this phenomenon is independent of area. The coefficient of this phenomenon is plotted on the y-axis of the Stribeck curve. Triboelectricity is generated by this force, which is also responsible for damping oscillations and converting kinetic energy into thermal energy. The static type of this force exists between a stationary object and the surface upon which it rests. For 10 points, name this force that two bodies in contact exert on each other.

ANSWER: friction

20. One author from this nation wrote about a character nicknamed "Hard Luck" who stabs a tobacco merchant in the head after preventing him raping a girl in *The Uprooted Pine*. That author wrote about a character who performs a C-section then kills the infant to buy time before tubes filled with honey and hornets lead to defeat for the Tartars in one of the titular *Battles of Coxinga*. A playwright from this nation wrote a play in which an oil merchant scams two silver *kamme* from Tokubei, leading him to kill Ohatsu and himself. For 10 points, name this home of the author of *The Love Suicides at Sonezaki*, Chikamatsu Monzaemon, who wrote *bunraku* and *kabuki* plays.

ANSWER: Japan

Delta Burke 2013  
Round 9 Bonuses

1. A poem by this man describes his father straining to dig flowerbeds, and another poem about the death of his younger brother ends with the line "A four foot box, a foot for every year." FTPE:

[10] Name this recently deceased poet of "Mid-Term Break," which is found in *Death of a Naturalist*.

ANSWER: Seamus Heaney [*HAY-nee*]

[10] Seamus Heaney translated this Anglo-Saxon epic poem, in which the titular heroic warrior travels to Denamark in order to kill a swamp monster that has terrorized King Hrothgar's realm.

ANSWER: Beowulf

[10] Beowulf kills this swamp monster that is "descended from Cain's clan" by tearing off its shoulder and arm. Beowulf kills its mother using the sword Hrunting in an underwater battle.

ANSWER: Grendel

2. Answer some things about a certain anthropologist, FTPE:

[10] This man penned the works *Sex and Repression in Savage Society* and *Coral Gardens and their Magic*. He's also known for a work wherein he provides an extensive study of the Trobriand Islanders.

ANSWER: Bronislaw Malinowski

[10] What was that work by Malinowski, part of whose title may bring to mind certain seekers of the Golden Fleece?

ANSWER: Argonauts of the Western Pacific

[10] Items such as "veigun" and "mwali" are among those associated with this Trobriand gift trading system discussed by Malinowski in his works.

ANSWER: kula ring or kula exchange

3. The daughter of a Communist exile from Bulgaria, this woman was married to Carlos Araujo for thirty years, and was a member of the DLP before joining the Workers' Party. For 10 points each:

[10] Name this former chief of staff for Lula da Silva, whom she succeeded as president.

ANSWER: Dilma Rousseff

[10] Dilma Rousseff is the current president of this South American country, which will host the World Cup in 2014 and whose city of Rio de Janeiro will host the Summer Olympics in 2016.

ANSWER: Brazil [or Brasil]

[10] Maria das Gracias Silva Foster is the CEO of this corporation, which produces over ninety percent of Brazil's oil and natural gas. Its symbol on the New York Stock Exchange is PBR.

ANSWER: Petrobras [or Petroleo Brasil]

4. This man destroyed the Enryakuji monastery and had earlier defeated the forces of Imagawa Yoshimoto at the Battle of Okehazama despite being vastly outnumbered. For 10 points each:

[10] Name this sixteenth century military commander whose unification of Japan was completed by Toyotomi Hideyoshi [*HEE-de-YAW-shee*] and Tokugawa Ieyasu [*EE-ye-YAH-soo*].

ANSWER: Oda Nobunaga [accept either]

[10] Oda Nobunaga committed this honorable form of suicide, whose name literally means "belly cutting," inside the Honnoji temple.

ANSWER: harakiri [or seppuku]

[10] Feudal lords known as daimyo often hired these warriors. According to the bushido code, if they were defeated or disgraced, they could perform harakiri, or seppuku, to keep their honor.

ANSWER: samurai

5. Daniele da Volterra was hired to paint over the genitalia that appeared in this work, which also depicts Saint Bartholomew holding a flaying knife and some skin. For 10 points each:

[10] Name this fresco located on the altar wall of the Sistine Chapel.

ANSWER: The Last Judgment

[10] *The Last Judgment* is a work by this Italian artist, who also painted the ceiling of the Sistine Chapel, and created a sculpture of Moses with horns for the tomb of Pope Julius II.

ANSWER: Michelangelo Buonarroti [accept either]

[10] Michelangelo modified Bramante's plan for this church, whose dome was completed by Giacomo della Porta, and whose baldachino [*bal-duh-KEE-noh*] was designed by Bernini.

ANSWER: Saint Peter's Basilica [or Basilica Sancti Petri; or Basilica Papale di San Pietro]

6. Paul Bachmann introduced and Edmund Landau popularized this notation from math and computer science, in which  $n$  is the number of elements to be processed. For 10 points each:

[10] Name this notation that can quantitatively describe the run time of an algorithm.

ANSWER: Big O notation [or Big Omicron; or asymptotic notation]

[10] Grover's algorithm is used to search the unstructured type of these systems in big O of square root of  $N$  time. The creation and manipulation of these structures is performed with SQL.

ANSWER: databases

[10] Grover's algorithm is this type of algorithm, and a qubit is a unit of information in computers of this type. This word also names a branch of physics often contrasted with classical mechanics.

ANSWER: quantum

7. The putative founder of this school wrote an essay titled "How to Make Our Ideas Clear." FTPE:

[10] What American philosophical movement of the early 20<sup>th</sup> century titled a work by another adherent, a book subtitled "A New Name for Some Old Ways of Thinking"?

ANSWER: Pragmatism

[10] This author of *The Fixation of Belief* and "How to Make Our Ideas Clear" is considered the founder of pragmatism in philosophy.

ANSWER: C. S. Peirce (purse)

[10] This pragmatist thinker and brother of the novelist Henry wrote *The Will to Believe* and *The Varieties of Religious Experience*.

ANSWER: William James

8. Darl Bundren causes one of these events in Gillespie's barn in William Faulkner's novel *As I Lay Dying*. FTPE:

[10] What is this type of dangerous event from which Ralph and Ponyboy rescue some children in the novel *The Outsiders*?

ANSWER: fire

[10] Tod Hackett, protagonist of the novel *The Day of the Locust*, is working on a huge painting depicting the burning of this large city, where Hackett works as a movie set painter.

ANSWER: Los Angeles (do NOT accept "Hollywood," as that's not title of painting)

[10] *The Day of the Locust* is a novel by this American author of *Miss Lonelyhearts*.

ANSWER: Nathaniel West

9. All members of this phylum possess pharyngeal slits at some stage of their life. FTPE:

[10] Name this phylum whose classes include amphibians, reptiles, birds, and mammals.

ANSWER: Chordata [or chordates]

[10] In addition to a nerve cord, chordates possess, at some stage, this rod-shaped structure derived from the mesoderm. It plays a role in the formation of the vertebral column.

ANSWER: notochord

[10] Formerly members of sub-phylum Urochordata, these marine animals, including sea squirts, are named for a structure composed of a cellulose-like material that resembles an item of clothing.

ANSWER: tunicates

10. The two bases for this designation are Lizatihi and Lighairihi. FTPE:

[10] What Arabic term denotes actions or items that are forbidden or sinful, the opposite of halal?

ANSWER: haram

[10] As is the case in Judaism, Islamic dietary law forbids the eating of this type of meat, as the animal has split hooves but doesn't chew cud.

ANSWER: pork

[10] Some adherents of this Christian offshoot avoid pork and shellfish as part of following their dietary code of I-tal [eye-tal].

ANSWER: Rastafarianism

11. This man was murdered in 1978 by fellow city supervisor Dan White, who later argued he had been crazed by a sugar rush from a Twinkie. FTPE:

[10] Who was this first openly gay elected official in California, played by Sean Penn in an eponymous bio-pic?

ANSWER: Harvey Milk

[10] Harvey Milk was called the "Mayor of Castro Street," a largely gay district in this city where Milk served as a city supervisor.

ANSWER: San Francisco

[10] Milk came to California from New York, which in 1968 saw what many call the birth of the gay rights movement after a riot named for this bar in Greenwich village where many fought police intrusion.

ANSWER: Stonewall Inn

12. The Suez formation of this type links Asia and Africa. FTPE:

[10] Panama is an example of what type of narrow landmass joins two larger landmasses and separates two bodies of water?

ANSWER: isthmus

[10] The Isthmus of Kra is shared by Thailand and this large island nation with capital at Kuala Lumpur.

ANSWER: Malaysia

[10] Auckland City lies on a namesake isthmus separating the Tasman Sea from the Southern Pacific on this specific island.

ANSWER: North Island (prompt on "New Zealand")

13. It was first formulated by Clapeyron from work by Boyle, Charles, and Gay-Lussac. FTPE:

[10] Name this law from general chemistry often stated as pressure times volume equals the number of moles times the gas constant times the absolute temperature.

ANSWER: ideal gas law

[10] Equal to PV divided by nRT, this factor symbolized by a capital Z quantifies deviations from ideal gas behavior. It is equal to one for an ideal gas, but is greater than one at high pressures.

ANSWER: compressibility factor [or compression factor]

[10] This modification of the ideal gas law includes terms that correct for the volume of the molecules and the attractive forces between molecules. Its namesake was a Dutch scientist.

ANSWER: Van der Waals equation

14. In one opera partially set in the Elysian Fields, this figure mourns his wife in the aria "Che faro," and in a different opera, this figure is forced by Public Opinion to reclaim his wife. FTPE:

[10] Name this figure from Greek mythology who travels to the underworld in numerous operas.

ANSWER: Orpheus [or Orfeo; or Orphee]

[10] The librettist Calzabigi collaborated with this eighteenth century German composer on the opera *Orfeo ed Euridice*, which contains the orchestral piece "Dance of the Blessed Spirits."

ANSWER: Christoph Willibald Gluck

[10] Jacques Offenbach's operetta *Orpheus in the Underworld* includes the "Infernal Galop," in which females wearing long skirts perform this repetitively named dance that includes high kicks.

ANSWER: can-can

15. This deity's namesake "virgins" maintained the temple fires sacred to her. FTPE:

[10] What Roman goddess of the hearth is analogous to the Greek Hestia?

ANSWER: Vesta (accept "Vestal Virgins," I suppose)

[10] This two-faced Roman deity's namesake gates were closed in times of peace and open during war.

ANSWER: Janus

[10] The Roman Lupercalia was a festival celebrating both Faunus and this type of animal that suckled Romulus and Remus.

ANSWER: wolf

16. Sidney Lanier's poem "Marshes of the Glynn" depicts coastal areas in this state. FTPE:

[10] Mackinley Kantor's novel *Andersonville* fictionalized the Confederate prison camp in what state?

ANSWER: Georgia

[10] This Georgia journalist popularized the tales of Br'er Rabbit as he heard them in Eatonton, Georgia.

ANSWER: Joel Chandler Harris

[10] This other native of Eatonton attacked Harris's appropriation of African-American folklore in "Uncle Remus: No Friend of Mine," an essay collected in her book *In Search of Our Mother's Gardens*. She also wrote *The Color Purple*.

ANSWER: Alice Walker



17. One battle in this war was preceded by William Eaton and Marine commander Presley O'Bannon leading some Arab mercenaries across five hundred miles of desert. FTPE:

[10] Name this war that included the Battle of Derna, which was won by the US in 1805.

ANSWER: (First) Barbary (Coast) War(s) [or Tripolitan War]

[10] During the First Barbary War, the USS *Philadelphia* was captured, but this man led a group into Tripoli harbor and destroyed the ship. He once gave the toast "Our country, right or wrong."

ANSWER: Stephen Decatur

[10] In addition to the First Barbary War, events in this man's presidency included the Louisiana Purchase, the Lewis and Clark expedition, and the Embargo Act of 1807.

ANSWER: Thomas Jefferson

18. The magnitude of their electric charge is either negative two-thirds or positive one-third. FTPE:

[10] Name these particles, of which there are six flavors, that constitute baryons and mesons.

ANSWER: quarks

[10] This physicist coined the term quark and proposed the concept of strangeness. This man also developed a method for organizing subatomic particles called the Eightfold Way.

ANSWER: Murray Gell-Mann

[10] The second generation of quarks includes the strange quark and this quark, which was predicted by the GIM mechanism. This quark was discovered in 1974 in the J/psi meson.

ANSWER: charm

19. This country saw the Ern Malley hoax, in which poems meant to be purposely bad were praised. FTPE:

[10] What country also produced the art critic Robert Hughes and the "bush balladeer" Banjo Patterson, who wrote "Waltzing Matilda"?

ANSWER: Australia

[10] The Ern Malley hoax in Australia was meant to mock adherents of this literary movement of the 1920s and 30s, which was led worldwide by writers like James Joyce and TS Eliot, and which espoused art for art's sake.

ANSWER: Modernism

[10] Australia's Peter Carey has twice won this literary award, given to the best novel written by an author from the British commonwealth.

ANSWER: Man Booker Prize

20. This man combined the Parti Bleau with the Clear Grits faction to form the Great Coalition. FTPE:

[10] Name this politician who resigned after allegations of bribes from railroad magnate Hugh Allan rocked his ministry in the Pacific Scandal.

ANSWER: John MacDonald

[10] MacDonald was the first prime minister of this North American country that is currently led by conservative Stephen Harper.

ANSWER: Canada

[10] During his ministry, MacDonald passed the Manitoba Act and launched the Wolseley Expedition in response to this uprising of the Metis [*mey-TEES*] led by Louis Riel.

ANSWER: Red River Rebellion