

National Academic Bee - Semifinals

Regulation Tossups

(1) The overturning of this document resulted in the growth of the Spitalfields silk industry. Mixed courts were among the stipulations included in the "secret articles" of this document, which was eventually ratified by the Parlement of (+) Rouen. This document was issued by a monarch who allegedly said that one city "is well worth a mass," and this document aimed to end one kingdom's (*) Wars of Religion. For the points, identify this decree in which Henry the Fourth granted significant rights to French Huguenots.

ANSWER: Edict of Nantes [[NAHNT]]

(2) This person promoted the use of storm glasses and gale warnings after the sinking of the Royal Charter. With Francis Beaufort, this person is credited with creating the science of weather forecasting. This person faced criticism for purchasing a ship named the Adventure (+) to accompany a journey to the Falkland Islands, where this person issued a copy of the Principles of Geology to (*) a famous passenger. For the point, name this captain who transported Charles Darwin on the HMS Beagle.

ANSWER: Robert FitzRoy

(3) This publication was accused of hacking into the computer of Bangladeshi justice Mohammed Nizamul Huq. This publication was derided by Vladimir Lenin as a "journal that speaks for British millionaires." This publication, which is known for not including the names (+) of the writers who create its articles, was founded by James Wilson to create support for the Corn Laws. (*) For the points, identify this economically liberal weekly publication, which is named for a former term for supporters of free trade, though which is now used to denote a practitioner of a branch of social science.

ANSWER: *The* Economist

(4) This thinker was accused of plagiarizing one idea after attending the lectures of Michael Polanyi. With Paul Feyerabend, this thinker discussed how certain disciplines lacked enough shared language or viewpoint to directly compare theories, as part of the incommensurability thesis. This thinker used the example of (+) Copernicus' heliocentric model replacing the Ptolemaic geocentric system as an example of a paradigm shift. (*) For the points, name this American philosopher who wrote *The Structure of Scientific Revolutions*.

ANSWER: Thomas Kuhn (or Thomas Samuel Kuhn)

(5) **This poem describes a lover who might state "one morn I missed him on the customed hill...Another came, nor yet beside the rill." An epitaph in this poem describes "a youth, to fortune and to fame unknown" who "rests his head upon the lap (+) of earth."** This poem, which claims that "the paths of glory lead but to the grave," describes a place "far from the madding crowd's (*) ignoble strife," where "the curfew tolls the knell of parting day." For the points, identify this Thomas Gray poem set in the cemetery of St. Giles' Church.

ANSWER: "**Elegy Written in a Country Churchyard**"

(6) **Manius Aquillius was elected as consul alongside this person, after the two leaders defeated King Teutobod and the Teutons at the Battle of Aquae Sextiae. Reforms championed by this person (+) led to the use of the eagle standard and caused soldiers to be called this person's "mules."** This person and a subordinate disputed who should get the credit for capturing the Numidian king (*) Jugurtha. For the points, name this Roman general and seven-time consul, a rival of Sulla.

ANSWER: Gaius **Marius** (accept **Marian** reforms; accept **Marius**'s mules)

(7) **When mounted on the front of a vehicle, these devices are called air dams. A version of these devices called roof flaps are able to deploy in emergency situations and were mandated by NASCAR after a crash involving Rusty Wallace. These devices differ from wings. (+) which are specifically made to generate downforce, and these devices are often adjusted by active drag reduction systems, as seen in (*) Formula One.** For the points, name these devices that are attached to the back of automobiles to increase aerodynamics.

ANSWER: **spoilers** (do not accept "wings")

(8) **Composer and type of piece required. These six-movement pieces only differ in structure by their fifth-movement galanteries, which switch between a minuet, bourrée, and gavotte. The scordatura fifth of these pieces was performed on the one-year anniversary of September Eleventh. (+) These pieces, the first of which opens with an arpeggiated G major chord, were first recorded by Pablo Casals. (*)** For the points, name these six pieces by J.S. Bach that were written for a string instrument played by Yo-Yo Ma.

ANSWER: **cello suites** by Johann Sebastian **Bach** (accept **cello suites** alone after "Bach" is mentioned)

(9) **This operation was planned within the Admiralty Tunnel of Gibraltar and caused François Darlan to switch allegiance to the Allies. The success of this operation caused Nazi Germany to launch Case Anton. (+) which resulted in the occupation of Vichy France. This operation involved attacks on the cities of Oran, Algiers, and Casablanca, (*) the last of which was captured under George S. Patton.** For the points, name this Allied invasion of North Africa, which was launched by Dwight Eisenhower in 1942.

ANSWER: Operation **Torch** (prompt on descriptive answers, saying "we need an operation name")

(10) In the German revision of one play, this character collapses after seeing her children, in an act the original playwright called a “barbaric outrage.” Krogstad blackmails this character over a borrowed sum. (+) and this character is teased for spending too much money on Christmas presents by a man who calls her a “wastrel.” The play in which this character appears ends with her leaving (*) her husband and slamming a door. For the points, name this wife of Torvald in Henrik Ibsen’s drama *A Doll’s House*.

ANSWER: Nora Helmer (accept either)

(11) This composer worked as an insurance executive and wrote an estate planning text titled *Life Insurance with Relation to Inheritance Tax*. This composer included the work *Hallowe’en in the work Three Outdoor Scenes*. (+) which also contained *Central Park in the Dark*. For another work, this composer wrote movements titled for “Putnam’s Camp,” “St. Gaudens,” and “The Housatonic at Stockbridge” (*) For the points, name this American modernist composer of *Three Places in New England*.

ANSWER: Charles Ives (or Charles Edward Ives)

(12) A Google-built ASIC [[ay-SIK]] named for processing these things includes the Trillium version. A Python library for machine learning is named for these things and the word “flow.” The density and flux of energy can be explained by the stress-energy (+) one of these things, while Cauchy [[COH-shee]] names one of these things (*) that describes the stress inside an object. Scalars and vectors are simple versions of, for the points, what mathematical objects that can be imagined as generalizations of matrices?

ANSWER: tensor (accept tensor processing unit; accept TensorFlow; accept stress-energy tensor; accept Cauchy stress tensor)

(13) Along with Eurynome, this figure took in Hephaestus when he was cast from Olympus to Lemnos. While being pursued by her future husband, this figure shapeshifted into fire, water, a lioness, and, finally, a serpent. Due to a prophecy that the son of this Nereid (+) would surpass his father, Zeus arranged for her to marry a mortal king of Pythia. In an attempt to make her son immortal, (*) this figure mostly submerged him in the River Styx. For the points, name this nymph, the wife of Peleus and mother of Achilles.

ANSWER: Thetis

(14) This author wrote a novel in which Martha works as a live-in secretary for Mark Coldridge, and that novel concludes the series *The Children of Violence*. This author of *The Four-Gated City* wrote a novel in which excerpts are interspersed around a frame story titled *Free Women*. (+) Blue, black, red, and yellow journals are kept by Anna Krull in a novel by this author partly based on her time in Southern Rhodesia. (*) For the points, name this British author of *The Golden Notebook*.

ANSWER: Doris Lessing (or Doris May Lessing)

(15) In this opera, one character sings about "the things that you're liable to read in the Bible" before repeating the title phrase. In this opera, characters sing "Gone, Gone, Gone" shortly after an argument over a dice game leads Crown to murder Robbins (+) with a cotton hook. In this opera, which includes the aria "It Ain't Necessarily So," Clara describes a time when "the livin' is easy." (*) For the points, identify this opera that features the aria "Summertime" and is set on Catfish Row, a work by George Gershwin.

ANSWER: Porgy and Bess

(16) Granodiorite and this type of rock form an igneous extrusion in Nigeria called Zuma Rock. This rock was named for a village in Tuscany, and varieties of this rock include a type called hornblende. Mid-ocean ridges are where this type of rock (+) forms, and this type of rock, which accounts for most of the oceanic crust, is sometimes known as "Black granite." (*) Formed when slow-cooling magma cools under the Earth's surface, for the points, what is this type of mafic, igneous rock?

ANSWER: gabbro

(17) Mountain Man John Colter escaped from a group of warriors from this polity after diving under a beaver dam as part of his namesake "Run." Under the leadership of Crowfoot, this polity refused to participate in the North-West Rebellion. (+) After being forced to reside in Indian Reserves, three constituents of this polity chose to remain in Canada, while the South Peigan (*) chose to remain in the United States. For the points, identify this confederacy of four related tribes in Montana and Alberta.

ANSWER: Blackfoot Confederacy (or Blackfeet; accept Siksika)

(18) At the Centennial Exhibition, this painting was displayed in the U.S. Army Post Hospital, where a critic derided its placement among "men and women of weak nerves." While many of the figures in the background of this painting appear to sleep, a mother covers her head with her arm (+) on the left. The artist of this painting is depicted in the audience, making a sketch as a group of men in frock coats cut (*) open a leg. For the points, name this Thomas Eakins painting that depicts a medical lesson.

ANSWER: The Gross Clinic

(19) According to this mathematician's irreducibility theorem, some polynomials cannot be broken down into smaller, rational components. With Nathan Jacobson, this mathematician names a ring system (+) in which every prime ideal is an intersection of primitive ideals. In one thought experiment, this mathematician imagined a building (*) that can accommodate an infinite number of guests. For the points, name this German logician who formulated the Grand Hotel Paradox and names 23 mathematical problems.

ANSWER: David Hilbert (accept Hilbert's irreducibility theorem; accept Hilbert ring; accept Hilbert's problems)

(20) **This psychologist is the namesake of a conflict resolution strategy in which one person attempts to state the opposing side's view with as much care as they would advocate for their own position. It's not Abraham Maslow, but, in the book *On Becoming a Person*, this psychologist argued that clients could best achieve (+) self-actualization through unconditional positive regard, as part of the 19 Propositions. (*)** For the points, name this early humanist psychologist who developed client-centered therapy.

ANSWER: Carl **Rogers** (or Carl Ransom **Rogers**; accept **Rogerian** argument)

(21) **In response to the bombing of Guernica, this author wrote the post-apocalyptic short story "By the Waters of Babylon." A poem by this author discusses a "stray ghost-walker with a ghostly gun" (+) who "lies a-mouldering in the grave" after a raid on Harpers Ferry. This author of the epic poem *John Brown's Body* wrote of Jabez Stone's damnation and trial (*) in another short story. For the points, identify this American author of "The Devil and Daniel Webster."**

ANSWER: Stephen Vincent **Benét**

(22) **A roundabout form of these types of reactions using spinning methyl iodide was found with crossed molecular beam imaging. Stereochemistry changes due to an inversion of configuration in an example of these reactions. (+) in which a "backside attack" occurs. A bimolecular form of these reactions that occurs in a concerted manner differs from a unimolecular form (*) with a carbocation intermediate. Coming in forms such as nucleophilic, for the points, what reactions in organic chemistry replace one functional group with another?**

ANSWER: **substitution** reactions (or single **substitution** reaction; or single **displacement** reaction; accept nucleophilic **substitution**; accept **SN-One**; accept unimolecular nucleophilic **substitution**; accept **SN-Two**; accept bimolecular nucleophilic **substitution**)

(23) **Prior to participating in the *Davis v. Prince Edward County* integration case, Oliver Hill was the first Black man elected to this city's council in the 20th century. The editor of this city's *News-Leader* (+) paper, James J. Kilpatrick, first used interposition to challenge *Brown v. Board*. This city houses (*) Maggie Walker's St. Luke Penny Savings Bank, the first bank in the U.S. founded by a Black woman. For the points, identify this city, the capital of the state that made Douglas Wilder the first Black American governor since Reconstruction.**

ANSWER: **Richmond**

(24) **A symmetric isothermal sphere of gas is affected by its own gravity in a differential equation named for this scientist and Robert Emden. As objects move through space, gravity can cause loss of momentum and kinetic energy in an effect this scientist called (+) "dynamical friction." This scientist names an equation relating radial distance and density in a (*) stellar core remnant. For the points, name this Indian-American astronomer who names a limit for the maximum mass of a white dwarf star.**

ANSWER: Subrahmanyan **Chandrasekhar** (accept Emden-**Chandrasekhar** equation; accept **Chandrasekhar** friction; accept **Chandrasekhar**'s white dwarf equation; accept **Chandrasekhar** limit)

(25) Works in this art style are often created in grisaille, or shades of grey, such as the 1964 Bridget Riley work *Current*, which appeared on the cover of *The Responsive Eye* catalog. This style notably features figure-ground anomalies to create (+) visual perceptual experiences, an aim following art movements such as the Divisionism of Georges Seurat and stemming from *trompe l'oeil* [[TROMP-loy]] traditions. (*) For the points, name this art style that uses abstract, black-and-white lines to fool the eye into seeing illusions.

ANSWER: Op art (also accept optical art; accept optical illusion art before "illusions" is mentioned)

(26) The lead-mirror experiment studied reactions involving these molecules, for which a namesake "clock" can be used to determine chemical kinetics. Two of these molecules are generated by a bond-dissociation process called homolysis, and reactions with these molecules can include a "fish-hook" (+) arrow. Antioxidants like vitamins A, C, and E can fight damage from these molecules, (*) which are exemplified by hydroxyl. For the points, name these molecules or ions that contain unpaired valence electrons, making them highly reactive.

ANSWER: radicals (or free radicals; accept radical clock)

(27) While working for *Playboy*, this author conducted the longest interview granted for publication with Reverend Martin Luther King Jr. This author requested that screenwriter David Stevens finish *Queen: The Story of an American Family*, (+) the intended sequel to this author's best-known work. This author used interviews with a former leader of the Nation of Islam to ghostwrite *The Autobiography of (*) Malcolm X*. For the points, name this author of *Roots: The Saga of an American Family*.

ANSWER: Alex Haley (or Alexander Murray Palmer Haley)

(28) Hills in this area are the most abundant geomorphic structures on Earth and can be created via the expansion of horst-and-graben features. This area, which is home to the tripod spiderfish, is able to support most of its life via phenomena such as whale falls (+) and cold seeps. This area between the bathyal zone and the hadal zone lies at the foot of continental rises. (*) For the points, name this area of the ocean within the pelagic zone, which is known for its namesake "plains."

ANSWER: abyssal zones (or abyssopelagic zone; accept abyssal plains or hills; prompt on "ocean floor" or equivalents)

(29) One theme in this ballet is based on the song "Bonaparte's Retreat." Dancers in this ballet partner up during the "Saturday Night Waltz," leaving the protagonist alone. For the orchestral arrangement of this ballet, the composer chose to omit a section partially titled "House (+) Party." The main character of this ballet is discovered by the Head Wrangler and dances to the choreography of Agnes de Mille in the (*) "Corral Nocturne." For the points, identify this ballet by Aaron Copland, which includes the sections "Buckaroo Holiday" and "Hoe-Down."

ANSWER: Rodeo

(30) An experiment to determine this phenomenon's outcome, which involves the use of a steam jacket and a thermometer, is known as Pullinger's apparatus. It is possible to show forces associated with this phenomenon with Tyndall's bar breaker experiment, and this phenomenon, which can create buckling in (+) railroad tracks, is a cause of sun kink and necessitates the use of movement joints on bridges. (*) For the points, name this phenomenon, which occurs when a material changes in length due to modulations in temperature.

ANSWER: thermal expansion (or thermal contraction; or thermal shrinkage; accept linear expansion)

(31) During this dynasty, the Gonghe Regency was supposedly co-ruled by the Dukes Ding and Mu, and this dynasty later became divided between eastern and western duchies. This dynasty's last ruler, Nan, attempted to ally with Chu and Yan (+) before being deposed by Zhaoxiang [JOW-SHYANG]]. This dynasty's relatively powerful Western era preceded its feudal Eastern era, and this dynasty was the first to claim the (*) "Mandate of Heaven." For the points, name this Chinese dynasty that overthrew the Shang and was replaced by the Qin [CHIN]].

ANSWER: Zhou [JOH]] dynasty

(32) One of these features called the Turlock Basin was contaminated by agricultural pollution in the San Joaquin Valley. Another example of these features within the Nubian Sandstone was exploited by Libya's Great Man-Made River. (+) The largest feature of this type within Australia is called the Great Artesian Basin, and the town of Ogallala (*) lends its name to one of these features in the Great Plains. Springs are natural exit points of, for the points, what type of underground, water-bearing features?

ANSWER: aquifers (accept Nubian Sandstone Aquifer System or NSAS; accept Ogallala Aquifer)

(33) Edward E. Simmons and Arthur Claude Ruge created a gauge that measures this quantity using resistance change with a Wheatstone bridge. This quantity is related to electrical resistance by the gauge factor, and the negative of the transverse form of this quantity (+) divided by the axial form is Poisson's ratio. In the linear elastic region, Young's modulus is defined by a ratio in which this quantity is in the (*) denominator. For the points, identify this quantity that measures relative deformation and can be plotted alongside stress.

ANSWER: strain (accept transverse strain; accept axial strain; accept mechanical strain; accept strain factor; accept strain gauge; accept strain gage; do not accept "stress")

(34) After this battle, the victors allegedly flayed the skin of Hugh de Cressingham to make souvenirs. Marmaduke Thweng may have escaped this battle, in which one side's forces were co-led by Andrew Moray. (+) This victory over the forces of the Earl of Surrey was pivotal in one region's War of Independence and boosted the reputation of (*) William Wallace. For the points, name this 1297 battle in which the Scots triumphed over the English at a certain wooden structure over the River Forth.

ANSWER: Battle of Stirling Bridge (accept Blàr Drochaid Shruighlea)

(35) A type of folk music called *gaita* originates from this city, which, along with Gibraltar, was sacked by Henry Morgan in 1669. This capital of the Zulia State is connected to the rest of its country by the General Rafael Urdaneta Bridge, across the Tablazo Strait. This city contains the headquarters of the PDVSA (+) near one of the world's largest oil reserves, and this city is the largest South American city on the Caribbean Sea. (*) For the points, name this second-largest city of Venezuela, which is situated at the northern end of an eponymous lake.

ANSWER: Maracaibo (accept Lake Maracaibo)

Extra Questions

(1) This composer's dedication to a countess in Steyregg led to that noble being known as the 'Lady of the Lake.' Deutsch numbers classify the works of this composer, who created incidental music for a play titled for the Cypriot princess Rosamunde. (+) This composer included the sections "The Linden Tree" and "Frozen" in a collection of songs set to the words of poet Wilhelm Müller, titled *Winterreise*. (*) For the points, identify this Austrian composer whose eighth symphony was left unfinished.

ANSWER: Franz Schubert (or Franz Peter Schubert)

(2) In a short story set in this U.S. state, a young girl named Sylvia chooses not to tell an ornithologist where to find the titular bird. This state is the setting of the story "A White Heron" and the novel *The Country of the Pointed Firs*. (+) both of which were written by Sarah Orne Jewett. A fictional city in this state named Derry is the setting of works such as *Cujo* (*) and *It* by a writer of horror fiction. For the points, identify this New England state, the setting of many works by Stephen King.

ANSWER: Maine

(3) This element is most commonly bonded to sulfur when found in deposits known as cinnabar. Minamata disease is caused by exposure to this element, which can also cause a type of poisoning from eating aquatic animals (+) such as dolphins. This element, which has an atomic number of 80, was formerly known as hydrargyrum (*) and is often used within thermometers. For the points, identify this element, which remains liquid at room temperature and has the atomic symbol Hg.

ANSWER: mercury (accept element 80 or Hg before mentioned; prompt on "quicksilver")