

Academic Bee Finals

Regulation Tossups

(1) **This substance, originally developed to help solidify mud, is a polymorph of a common compound that melts at a temperature 45 degrees higher than that compound. This substance was invented by Dr. Felix Hoenikker, (+) and was used by the dictator Papa Monzano to commit suicide, resulting in disastrous consequences. (*)** For the points, name this compound that causes solidification of any liquid water that it comes into contact with, thereby causing the end of the world in Kurt Vonnegut's novel *Cat's Cradle*.

ANSWER: **ice-nine** (do not accept "ice" or "water")

(2) **The main reagent used in this test is iodine in the presence of a base, typically sodium hydroxide or potassium hydroxide. A positive result of this test is indicated by the appearance of a bright yellow precipitate. (+)** This test is specific for compounds containing the CH₃CO group, commonly found in methyl ketones like acetone and certain secondary alcohols. (*) For the points, name this chemical test used to detect the presence of methyl ketones or compounds that can be oxidized to methyl ketones.

ANSWER: **Iodoform** Test (accept **Haloform** Reaction)

(3) **This artist showed St. Francis on the right and an armored figure, perhaps St. George, on the left with the Madonna on a throne in the center, in his *Castelfranco Madonna*. In an early landscape painting by this artist, a soldier holds a (+) tall staff on the left, and looks in the direction of a gypsy breastfeeding a baby. Titian [[TIH-shyen]] likely copied this artist's painting of a (*) nude woman lying against a rock. For the points, name this Venetian artist of *The Tempest* and *Sleeping Venus*.**

ANSWER: **Giorgione** (or Giorgio **Barbarelli** da Castelfranco)

(4) **In 2020, researchers confirmed the composition of this substance using the Sunyaev-Zel'dovich effect and observations of localized fast radio bursts. This substance was first indirectly observed by detecting absorbed X-rays from rapidly growing (+) supermassive black holes. This substance is considered the most likely solution to the missing baryon problem, and it is described as warm-hot and consists of filamentous webs of plasma. (*)** For the points, name this substance that, like dark matter, occupies the space between the Milky Way and Andromeda.

ANSWER: **Intergalactic medium** (or **IGM**; or warm-hot **intergalactic medium** or **WHIM**; accept **Circumgalactic medium**; reject "interstellar medium")

(5) **This empire regaled its guests at the "Forty Columns" pavilion, which, like the Ali Qapu palace, was home to many frescoes such as depictions of the battle of Taher-Abad and the defeat to Selim the Grim in the Battle of Chaldiran. (+)** This empire held its centers of government at Qazvin and Tabriz, and rulers of this empire included Ismail the First and Abbas the Great. (*) For the points, name this Persian gunpowder empire which rivaled the Ottomans and made Shi'a Islam the primarily religion of Iran.

ANSWER: **Safavid** Empire (or **Safavid** Iran; or **Safavid** Persia)

(6) **Metal-ammonia complexes exemplify this type of covalent bond, where the lone pair of electrons on ammonia serves as a Lewis base, forming a stable complex with a metal cation. The formation of this type of covalent bond is often represented by an (+) arrow pointing from the donor atom to the acceptor atom, indicating the direction of electron donation. (*)** For the points, name this type of covalent bond where both electrons come from one atom to form a shared pair with another atom.

ANSWER: **Coordinate** Bond (accept **Coordinate** Covalent Bond; or **Dative** Bond; or **Dipolar** Bond)

(7) **This term is notoriously referred to as film criticism's "grand undefined term." The definition of this term includes elements such as makeup and lighting placement, (+) and this term can describe part of what gives a stage or screen director's work a signature aesthetic. *The Cabinet of Dr. Caligari's* expressionistic approach exemplifies this term, which encompasses blocking and (*) set design. For the points, identify this French-named term for everything in front of the audience or camera, literally "put in the scene."**

ANSWER: **Mise-en-scène** (do NOT accept or prompt on "Mise en place")

(8) **This author's pennames included Pierre Andrézel and Osceola. This author was encouraged by activist Mary Bess Westenholtz, the first woman to ever speak in the Folketing. Two works by this author of *Seven Gothic Tales* (+) were adapted into Oscar-winning films, including *Babette's Feast*. This author's most notable book is often published alongside *Shadows on the Grass* and discusses her time as the owner of a coffee plantation in Kenya. (*)** For the points, name this Danish author of *Out of Africa*.

ANSWER: Karen **Blixen** (or Isak **Dinesen**; or Karen **Dinesen**)

(9) **A campaign to save this building from demolition failed in its attempts to also save the neighboring Lincoln Trust building. Brown sandstone transitions to brick above the second floor (+) of this building often cited as an early example of the skyscraper. The architect of this building claimed it was built for a "utilitarian age", exemplifying his notion that (*) "form follows function." For the points, name this St. Louis building designed by Louis Sullivan.**

ANSWER: **Wainwright** Building

(10) **The rate of this process due to natural causes can be estimated with the Chaturvedi formula. In arid areas, this process can be measured using the chloride mass balance method. Increased runoff (+) and decreases in this process are caused by building impervious surfaces such as asphalt and pavement. This process is sometimes considered to be the flux of the water (*) table level. For the points, name this process by which groundwater and aquifers refill.**

ANSWER: Groundwater **Recharge** (or **Deep Drainage**; or **Deep Percolation**; prompt on "Percolation"; prompt on descriptive answers)

(11) **He's not A.A. Milne, but this man created his most famous characters to amuse his son Christopher who was suffering from measles. One locale created by this author has a native language called Sudric, which is inspired by Manx (+) and contains Rolf's Castle and the town of Skarloey [[skar-LOW-ee]]. The Railway Series detailed adventures on the Island of Sodor (*) created by, for the points, what reverend and author who popularized characters such as The Fat Controller and Thomas the Tank Engine?**

ANSWER: Wilbert Vere **Awdry**

(12) **This man stopped clashes with the government while serving as captain-general during Francisco Ferrer's execution. On the death of Prime Minister Antonio Cánovas del Castillo, this man was replaced by Ramón Blanco y Erenas, and he granted the right of the (+) Women of Malolos to go to a night school as Governor-General of the Philippines. Known for operating a *reconcentrado* policy to house prisoners in (*) concentration camps, this is, for the points, what Spanish general nicknamed "the Butcher" in Cuba?**

ANSWER: Valeriano "Butcher" **Weyler** (or Valeriano **Weyler** y Nicolau, First Duke of Rubí, First Marquess of Tenerife)

(13) **This scientist attempted to deduce the fine structure constant using the number of protons in the observable universe. This scientist determined the point at which radiation pressure would overcome gravity and rip a star apart, the limit of a star's (+) luminosity. This scientist's most famous discovery took place on the island of Príncipe and demonstrated that the Sun's gravity could (*) bend light. For the points, name this British astrophysicist whose observations during a solar eclipse proved general relativity.**

ANSWER: Arthur **Eddington**

(14) **One book by this author asks, "Why then are we not all socialists?" and another one discusses the author's experience of kitchen work in France. This author of *The (+) Road to Wigan Pier* and *Down and Out in Paris and London* also fought in the Spanish Civil War, as recounted in his memoir (*) *Homage to Catalonia*. This author included the colonial essay "Shooting an Elephant" in his collection *Burmese Days* and also wrote a dystopian novel describing the Airstrip One in Oceania. For the points, name this British author of *Nineteen Eighty-Four*.**

ANSWER: George **Orwell** (or Eric Arthur **Blair**)

(15) **This group was explicitly not exempt from the gabelle salt tax and the *corvée royale*, and it included villeins. Abbé Sieyès (+) wrote a pamphlet asking, “What is [this entity]?” in response to (*) Jacques Necker, concluding that it is “Everything.”** Contrasted with two other groups including clergy and nobleman, respectively, for the points, what was this poorly-represented political entity that comprised the peasants and bourgeoisie in early modern France?

ANSWER: **Third Estate** (accept *What is the Third Estate?*; prompt on “peasants” or “bourgeoisie” by asking them to be *less specific*)

(16) **These particles were indirectly observed by Yung-su Tsai and Martin Lewis Perl using the Stanford Linear Accelerator Center’s SPEAR collision ring. Due to their high mass and short lifespan, these particles do not generally form observable bremsstrahlung radiation. (+) These particles are the more massive example of third-generation leptons and are the only leptons massive enough to decay into hadrons. (*)** For the points, name these negatively charged particles that are much more massive than electrons or muons.

ANSWER: **Tau** (or **tau** lepton; or **tau** particle; or **tauon**; or **tau** electron; prompt on “lepton”; do not accept or prompt on “electron” alone)

(17) **During one expedition in East Africa, this man compared his Swahili porters to “human camels” and shot several of them dead. This man was the first European to scale Mount Kenya, and his most notable idea divided the Earth into the (+) World Island and the Outlying Islands and posited that control of central Eurasia was key to world dominance. (*)** For the points, name this British geographer, whose article “The Geographic Pivot of History” introduced “heartland theory.”

ANSWER: Halford **Mackinder** (or Sir Halford John **Mackinder**)

(18) **This author of *Flore française* worked with the Jardin des Plantes as a botanist. This man, who coined the word “invertebrates,” was the first to separately classify arachnids and insects. He’s not Darwin, but this man’s (+) evolution theory is remembered for his “use and disuse” model, as well as a concept that is being re-evaluated by (*) epigenetics.** For the points, name this 18th-century French biologist who theorized genetic changes within an organism could affect subsequent generations.

ANSWER: Jean-Baptiste **Lamarck**

(19) **Marguerite Long revised the score of this piece by adding metronome markings to movements such as a G major minuet, which succeeds a rigaudon. This piece's composer stated, “the dead are sad enough, in their eternal silence” (+) when asked about not making the piece more depressing. This piece, whose movements pull from Baroque forms, is dedicated to the composer's friends who (*) died in World War One.** For the points, name this suite paying homage to the title French Baroque composer by Maurice Ravel.

ANSWER: Le **Tombeau de Couperin** (or *The Tomb of Couperin*)

(20) **This tributary of the Occoquan was the site of a battle which ended with Irvin McDowell's men frantically retreating towards one capital city. The Schofield Report found that a loss near this river, which had been blamed on Fitz John (+) Porter, was actually the responsibility of John Pope. That loss at this site opened up the Maryland Campaign which eventually resulted in the Battle of (*) Antietam.** For the points, identify this Virginia river which hosted two major battles, including the first major battle of the U.S. Civil War.

ANSWER: **Bull Run** (accept First Battle of **Bull Run**; or Second Battle of **Bull Run**; prompt on "Manassas" [which is the nearby city and secondary namesake of both battles])

(21) **In Wallace or Dadda trees, a gate representing this function is used to multiply bits of the two numbers. A gate representing this function calculates the overflow carry value in a half adder circuit, while the sum is calculated by an XOR [[EX-or]] gate. Using (+) De Morgan's laws, one can attain this function in a circuit by negating every input to an OR gate. In C-like languages, two (*) ampersands represent, for the points, what Boolean function that returns true when both of its inputs are true?**

ANSWER: **And** (accept **And** Gate; accept Logical **And**)

(22) **In one story, this man was a descendent of Dascylus, who became king because of a curse Ardys placed on his own son. According to Herodotus, this man bribed an oracle with gold mixing bowls to convince his nation to follow him into war against the Ionians. This man was originally a shepherd who used a (+) magical artifact to kill King Candaules and marry his widow. The most famous account of this man is a thought experiment about whether a man who could turn (*) invisible would continue to act justly.** For the points, name this semi-legendary king of Lydia whose magical ring is described in Plato's *Republic*.

ANSWER: **Gyges** [[GYE-jeez]] of Lydia (or **Gugos**; accept Ring of **Gyges**)

(23) **One artist from this school depicted a red sun setting beside an active volcano in Cotopaxi and showed two men praying at a cross in an idealized South American landscape in *The Heart of the Andes*. (+) Another artist from this school depicted an enormous drinking fountain in *The Titan's Goblet* and showed a meandering (*) river in *The Oxbow*.** That artist from this school is perhaps best known for depicting the rise and fall of a Greco-Roman civilization in *The Course of Empire* series. For the points, name this Romanticist American school of painting whose members like Frederic Edwin Church and Thomas Cole often depicted New England scenes as well as the namesake New York river.

ANSWER: **Hudson** River School

(24) **This no-longer-extant organization was created with the help of John Gonson and Thomas de Veil, and its members were made salaried by Sampson Wright. "Blind Beak" John Fielding led this former organization along with his brother Henry Fielding, and members of this group were similar to the (+) "thief-takers." This organization stopped the Despard plot against George the Third by arresting Colonel Edward Despard. (*)** For the points, identify this organization, whose officers patrolled streets as the first professional London police force.

ANSWER: **Bow Street Runners** (do NOT accept or prompt on "Metropolitan Police" or "London Police")

(25) **Particles released in this type of decay have low penetration power due to their relatively large mass and positive charge, so low that this type of decay can be stopped by a sheet of paper or human skin. (+) Common isotopes that undergo this type of decay include uranium-238 transforming into thorium-234 and radium-226 transforming into radon-222. (*)** For the points, name this type of radioactive decay in which an unstable atomic nucleus emits a helium-4 nucleus, namely a particle consisting of two protons and two neutrons.

ANSWER: **Alpha** Decay

(26) **The extremely deep cave Abismo Guy Collet is located within one of these features in Barcelos. The film Up took inspiration from one of these features in Canaima National Park in Bolivar State called Kukenán. Examples of these features such as (+) Cerro Sarisariñama are found in the Guiana Shield and are nicknamed "islands above the rainforest." The source of Angel Falls, Auyán, is one of these features, the largest of which is (*) Roraima.** For the points, name these sandstone table-top mountains which exhibit isolated biodiversity.

ANSWER: **Tepuis** (prompt on "mountains" or "tabletop mountains")

(27) **This book ends with a "star-spirit" being instructed to fly behind the sunset and sing to humanity, which is so calming it ends all wars. This book's title creature defeats the Space-Bat-Angel-Dragon in a fire contest by tricking it into flying to the sun. (+) This book describes the capture of the title creature for eating farm equipment before he is rescued by Hogarth. (*)** For the points, name this Ted Hughes children's book that inspired a Brad Bird movie about a large metal robot.

ANSWER: The **Iron Man**: A Children's Story in Five Nights (or The **Iron Giant**)

(28) **In this present-day country, the US-educated preacher John Chilembwe led a suppressed rebellion against colonial rule. Under the presidency of Bingu wa Mutharika, this country briefly changed its flag to feature a white sun. This country, whose (+) kwacha currency is divided into 100 tambala, used the pound prior to independence. Once led by Hastings Banda, this country is currently led by former theologian Lazarus Chakwera. (*)** For the points, name this country known under British rule as Nyasaland.

ANSWER: Republic of **Malawi**

(29) **Heino Falcke and Luciano Rezzolla argued that these phenomena originate from a hypothetical type of neutron star that collapses into a black hole called a blitzar. A type of these phenomena called perytons were found to actually be caused by prematurely opening (+) microwave ovens. These phenomena were first detected by Duncan Lorimer using archival data from the Parkes Observatory. (*)** For the points, name these poorly understood phenomena that consist of rapid pulses of long-wave electromagnetic radiation.

ANSWER: **Fast radio burst** (or **FRB**; accept **Lorimer Burst** before "Lorimer")

(30) **The words “pain is truth” serve as a creed for a torturer in a work of this title which sees “the Empire” declare a state of Emergency against the central group. In a (+) poem of this name the central people are called a “kind of solution” by Constantine Cavafy. Dino Buzzati’s *The Tartar Steppes* heavily inspired another novel with this title, which focuses on Colonel Joll and the Magistrate, written by a (*) South African author. The title people never arrive in, for the points, what anti-colonial novel by J.M. Coetzee?**

ANSWER: **Waiting for the Barbarians**

(31) **The Mu Rockets developed by this organization are mainly launched from the Uchinoura facility. This organization also created the *Kibō* module of the ISS. This organization launched its first vessel (+) in 1970, making its country the first non-Western nation to launch a spacecraft. *Hayabusa* was made by this organization, which landed the SLIM lunar module on the Moon in 2024 uses radio telescopes made by (*) Mitsubishi Electric. For the points, name this space agency based in Tokyo.**

ANSWER: **JAXA** (or **Japan Aerospace Exploration Agency**; prompt on "Japanese Space Agency" or similar answers)

(32) **A ruler of this first name was thrown off the Column of Theodosius after leading an attack at "Typhetos Lithos." A ruler of this name was strangled after his people tried to proclaim Nicholas Canabus as ruler, while another ruler of this name was captured by (+) Boniface of Montferrat during the Fourth Crusade. The Komnenian restoration began under a ruler with this name, whose daughter (*) Anna Komnene wrote a historical work inspired by this name. For the points, identify this name of the Byzantine ruler who called for the First Crusade.**

ANSWER: **Alexios** (or **Alexius**; accept **Alexiad**; or **Alexias**; accept any specific **Alexios** like **Alexios Komnenos**)

(33) **Supported by Philip Armour and Henry Adams, this movement was aided by the Edgefield Real Estate association. As a result of this movement, the settlement of Nicodemus grew and John St. John created a relief organization. Benjamin (+) "Pap" Singleton helped organize this event, for which failed bills were introduced by John Ingalls and James Garfield. A "Black Moses" led this event in which migrants traveled to Wyandotte. (*) For the points, name this movement of African Americans who migrated to Kansas in 1879.**

ANSWER: **Exodusters** (accept **Exoduster** Movement; accept **Exodus** of 1879)

(34) **In one work by this philosopher, the narrator passes through the gates of Night and Day and is taken in a chariot to see an unnamed goddess. In a dialogue by Plato, this philosopher proposed the “third man” argument (+) against the theory of forms. This philosopher distinguished between the “Way of Truth” and the “Way of Opinion” in a now-fragmentary poem commonly called “On Nature.” (*) For the points, name this contemporary of Socrates, the founder of the Eleatic School.**

ANSWER: **Parmenides** of Elea

(35) **This document was criticized by John Jameson and led to comments from William Herndon, who called it "political suicide." This document had eight points, with the first on the treaty of 1819, and the last about General (+) Zachary Taylor, who claimed "no such movement was necessary to the defense or protection of Texas." Issued by a Whig after the Thornton Affair, this is, (*) for the points, what set of resolutions that asked to identify the site where an 1846 skirmish occurred before the Mexican-American War?**

ANSWER: **Spot** Resolutions

Extra Questions

(1) **This man invented the Traverse family and the Chums of Chance in a story set between the 1893 Chicago World's Fair and World War One. In another novel, this author fictionalized the journeys of two English astronomers who meet Nevil Maskelyne and Thomas (+) Cresap. This author wrote about an LSD-prescribing doctor named Dr. Hilarious in a work that features a muted post horn symbol and the Trystero organization. (*) Oedipa Maas appears in a work by, for the points, what author of *Against the Day* and *The Crying of Lot Forty-Nine*?**

ANSWER: Thomas **Pynchon** (or Thomas Ruggles **Pynchon** Jr.)

(2) **In 1966, this man gave a speech in Phnom Penh calling for an American withdrawal from Vietnam. This man was often misattributed as originating the phrase "America's exorbitant privilege" regarding the Bretton Woods system, and this man eventually partly (+) withdrew his country from NATO in 1966. At Expo 67 in Montreal, this man declared "Vive le (*) Québec libre!" to the disdain of Canadian leader Lester Pearson. For the points, name this president of France and leader of the Free French in World War Two.**

ANSWER: Charles **de Gaulle** (or Charles André Joseph Marie **de Gaulle**)

(3) **This author's novel about a summer in the life of the Spaulding family began his so-called Green Town cycle. A story about racist Samuel Teece called "Way in the Middle of the Air" is now often omitted from a collection by this author that begins with (+) "The Rocket Summer." This writer of *Dandelion Wine* depicted several "expeditions" in stories that formed (*) *The Martian Chronicles*. For the points, name this author who created the book-burning Guy Montag in *Fahrenheit 451*.**

ANSWER: Ray **Bradbury** (or Ray Douglas **Bradbury**)