

2015 OAC Regionals – Round 6

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Category Round

American Literature: Name these Pulitzer Prize-winning authors.

Team A: What author won the 1976 Pulitzer Prize for his novel about a fictional version of *Delmore Schwartz* entitled *Humboldt's Gift*?

ANSWER: Saul **Bellow** [or Solomon **Bellows**]

Team B: The novella *Pale Horse, Pale Rider* and the novel *Ship of Fools* were written by what author who won the 1965 Pulitzer Prize for her collected short stories?

ANSWER: Katherine Anne **Porter** [or Callie Russell **Porter**]

Tossup: This author won the Pulitzer Prize for writing a work that examines “corporation land” and “technology land”; that work examines the March on the Pentagon. Ramses IX (the ninth) tells tales of time past in this author’s novel set in ancient Egypt; that work is *Ancient Evenings*. One of his last novels, which focuses on Dieter (DEE-tur), who notes that a demon possessed Adolf Hitler in his youth, is titled *The Castle in the Forest*. This author of *Armies of the Night* won another Pulitzer Prize for his nonfiction novel about Gary Gilmore. Name this author who wrote *The Executioner's Song*.

ANSWER: Norman Kingsley **Mailer**

Mathematics: Answer some questions about mathematical proofs.

Team B: At the end of some mathematical proofs, you may find these three letters, representing a Latin abbreviation, which indicates that the proof is over.

ANSWER: **Q.E.D.** [accept **quod erat demonstrandum**]

Team A: In this proof technique, you assume that the opposite of what you are trying to prove is true, then show that an absurd result occurs; thus your original statement must be true.

ANSWER: proof by **contradiction** [accept **indirect** proof or **apagogical argument** or **reductio ad impossibile**]

Tossup: This technique is demonstrably valid via the well-ordering principle. Often used to verify a summation formula, many mathematicians make use of this technique’s strong form, so that all statements from “1 to n” are true. This technique starts with proving a base case and then assuming that a statement at n is true; all that is needed to be done is to show that the correctness of n implies the correctness of “n + 1” (“n plus one”). Name this mathematical proof technique which shares its name with a type of reasoning that makes generalizations from the specific.

ANSWER: proof by **induction** [accept word forms]

World History: Name the following related to events that occurred during the 17th century.

Team A: Ieyasu's (ee-ay-AH-sooz) victory at the Battle of Sekigahara paved the way for the 1603 establishment of this Japanese shogunate which ruled during the Edo period for over two and a half centuries.

ANSWER: Tokugawa Shogunate [or Tokugawa Bakufu]

Team B: The first Europeans to sight New Zealand did so in 1642 under the command of this Dutch explorer who also discovered and named Van Diemen's Land, which was later renamed after him.

ANSWER: Abel Janszoon Tasman [do not accept or prompt on "Tasmania"]

Tossup: Anne Vaux (VOO) was arrested following this event, which resulted in the execution of Edward Oldcorne after he was discovered hiding at Hindlip Hall with Henry Garnet. Several men involved in this event were killed during a skirmish at the Holbeche House. Some historians believe that Francis Tresham was responsible for sending the anonymous letter that warned Lord Montague of this event. Robert Catesby (KAYTS-bee) organized this event, which was effectively ended when a search of an undercroft below the House of Lords revealed Guy Fawkes. Name this 1605 plot to assassinate King James I (the first) by using a certain explosive.

ANSWER: Gunpowder Treason Plot

Fine Arts: Name these American artists

Team B: This artist depicted fellow Hudson River School painter Thomas Cole and poet William Cullen Bryant standing on a cliff in the painting *Kindred Spirits*.

ANSWER: Asher Brown Durand

Team A: This early American painter is best known for his painting *Declaration of Independence*, which graces the backside of the two-dollar bill.

ANSWER: John Trumbull

Tossup: The first book by art historian Lloyd Goodrich dealt with the *Life and Work* of this artist, who painted the Biglin brothers in several of his works. This artist had his wife, Susan, paint himself into the right end of a work that shows Dr. David Agnew holding a scalpel. This artist and five other young men are shown enjoying Dove Lake while naked in the painting *The Swimming Hole*. The Schuylkill (SKOOL-"kill") River was the setting of another of his paintings which shows a single skull being used by Max Schmitt. In his best known work, a woman cringes as a crowd witnesses a surgery being performed by the title doctor. Name this artist of *The Gross Clinic*.

ANSWER: Thomas Cowperthwait Eakins (AY-kinz)

Life Science: Name these structures found within a typical cell.

Team A: This portion of the cyto·skeleton is organized by MTOCs. Dynein (“DIE”-neen) and kinesin move across them.

ANSWER: microtubules

Team B: This part within the nucleus is the location where ribosomes are synthesized.

ANSWER: nucleolus

Tossup: L-form bacteria are artificially created to lack this structure, while mycoplasmas are bacteria that naturally do not have it. Vanco·mycin is a glyco·peptide antibiotic that inhibits its synthesis. In some organisms, the outermost portion of it is called the middle lamella. This structure can be bypassed using plasmodesmata and sometimes contains a waxy portion called the Casparian strip. In diatoms, this structure is called a frustule (FRUST-yule) and is comprised of silica. The lignin is found in this structure in plants. Name this protective layer of the cell, which is made of pep·tido·glycan in bacteria and cellulose in plants.

ANSWER: cell walls [prompt on “walls”]

English / World Literature: Give the following related to lunar references in works of literature.

Team B: *From the Earth to the Moon* is one of the many science fiction novels in which what author depicts journeys to the moon?

ANSWER: Jules Gabriel Verne

Team A: What author of *Comical History of the States and Empires of the Moon* is better known for appearing in a 19th century play in which he secretly loves Roxane?

ANSWER: Hercule-Savinien Cyrano De Bergerac

Tossup: The oldest piece of prose in this country’s literary tradition describes a girl that is found in a plant leaf as a youth and raised by human foster-parents before becoming Princess of the Moon. A novelist from this country wrote about an old man, who visits an establishment in which all of the young girls have been drugged, in the novella *The House of the Sleeping Beauties*. That author from this nation also wrote *Snow Country*, which is set in a hot springs town, or *onsen*. Name this country that was home to the writer Yasunari Kawabata.

ANSWER: Japan [or Nihon-koku or Nippon-koku]

American Government / Economics: Name the following related to the economics of living.

Team A: The Case-Shiller metric is an example of what measure of the cost of living, which is calculated for a “basket of goods”?

ANSWER: consumer price index or CPI

Team B: What economic variable in the cost of living is often controlled through the use of namesake price ceilings? For a business, this cost is often tax-deductible.

ANSWER: rent

Tossup: The golden rule of this quantity is used to figure out what is the ideal macroeconomic level of it for growth. This quantity, which is the S in the IS-LM model, is the upper bound on the so-called “reserve ratio”, which is defined as the amount of money the Federal Reserve mandates that banks keep on hand. A financial institution that specializes in mortgages is called a “[this] and loan bank”. Accounts named for this quantity feature a rate of return that ideally beats the inflation rate. Name this quantity, which is defined as the portion of income one keeps for future use.

ANSWER: savings rate

Physical Science: Name these acids.

Team B: This strong acid, which was called oil of vitriol in antiquity, is made by the lead chamber and contact processes.

ANSWER: sulfuric acid [or H₂SO₄]

Team A: This other strong acid, which is formed from the Ostwald process, can come in red and white fuming varieties.

ANSWER: nitric acid [or HNO₃]

Tossup: A “trifluoro” derivative of this acid is used in reverse phase HPLC to increase resolution. When combined with sodium bi-carbonate, this acid reacts to form short-lived carbonic acid as one of its products. If no water is present in a solution of this acid, it is termed “glacial.” An outdated process for synthesizing this acid makes use of a catalyst containing rhodium, and that process was supplanted by one that uses an iridium catalyst; both of those processes add a carbonyl group to methanol. This acid is made through the Monsanto and Cativa processes. Name this carboxylic acid, which is found in low concentrations in vinegar.

ANSWER: acetic (uh-SEE-tik) acid [or ethanoic acid or CH₃COOH or CH₃CO₂H or C₂H₄O₂]

Geography: Name these islands.

Team A: The Mona Passage separates Puerto Rico from this Caribbean island that contains the nations of Haiti and Santo Domingo.

ANSWER: Hispaniola (hih-span-YOH-lah) [or La Espanola]

Team B: The Strait of Malacca separates the Malay Peninsula from this largest all-Indonesian island whose most populous city is Medan.

ANSWER: Sumatra [or Sumatera]

Tossup: The remains of a human known as the Cheddar Man were discovered in a namesake gorge on this island. To the northwest of this island is a strait known as The Minch, and the western terminus of its Penwith Peninsula is known as “Land’s End.” The body of water directly east of this island has a shallow area known as Dogger Bank. Ben Nevis is the highest mountain on this island, which is directly south of the Orkney Islands. The Severn is the longest river on this island, which the Strait of Dover separates from France. The River Thames (temz) flows through the most-populous city on what largest European island which is directly east of Ireland?

ANSWER: Great Britain [do not accept or prompt on “United Kingdom,” “England,” “Scotland,” or “Wales”]

American History: Name these events in which many people were killed.

Team B: Several hundred members of the Lakota tribe were killed during this 1890 skirmish which began after an attempt to disarm a Lakota man named Black Coyote led to the discharge of a rifle.

ANSWER: Wounded Knee Massacre [or Battle of Wounded Knee Creek or Chankpe Opi Wakpala]

Team A: Thirty-six people were killed in this 1937 incident in Lakehurst, New Jersey that prompted reporter Herbert Morrison, whose news team was recording at the time, to exclaim “Oh the humanity!”

ANSWER: Hindenburg disaster [accept Hindenburg explosion or other equivalent answers that mention Hindenburg]

Tossup: The remains of many of those killed during this event were first discovered at the Fresh Kills landfill. Operation Yellow Ribbon was initiated in response to this event, which was the subject of an investigation by a group headed by Thomas Kean. One casualty of this event was Todd Beamer, who spoke the phrase “let’s roll” shortly before being killed outside of Shanksville, Pennsylvania. This event was chiefly planned by Khalid Sheikh Mohammed (kah-LEED “shake” moh-HAH-med), and it led directly to passage of the PATRIOT Act. Name this 2001 event in which al-Qaeda (al-KYE-duh) terrorists flew airplanes into the Pentagon and World Trade Center towers.

ANSWER: 9/11 attacks [accept equivalents such as September 11th attacks or more specific equivalents such as the World Trade Center attacks]

Alphabet Round – Letter F

1. Type of mutation in which a nucleotide base is added or deleted, causing a change in the codon sequence.
2. This language group, which is spoken in a similarly named northerly Dutch province, is the living language that is the closest linguistically to English.
3. Retired English professor who is too apprehensive to directly fight against the book burners in Ray Bradbury's *Fahrenheit 451*.
4. **(TWO WORD ANSWER)** – U.S. political party of the 1840s and 1850s which opposed expansion of slavery into western territories.
5. This neoclassical sculptor is known for his sculpture *The Minuteman* as well as the statue of Abraham Lincoln in the Lincoln Memorial.
6. **(HYPHENATED OR TWO WORD ANSWER)** – These diagrams in physics are used to illustrate all the possible forces acting on an object, allowing for the equilibrium condition or magnitude of forces to be determined.
7. After his victory in the Spanish Civil War, this man ruled as Dictator of Spain from 1939 to 1975.
8. Belgian composer best-known for his *Violin Sonata in A Major* and *Symphony in D Minor*.
9. Klaus Mann's novel about a clown is one of the many adaptations of the legend of this man, who sells his soul to the devil for knowledge in a play by Goethe.
10. **(TWO WORD ANSWER)** – Occupation of the two men shown *Descending the Missouri* in an 1845 painting by George Caleb Bingham.
11. This scientist's namesake paradox addresses the mathematical improbability of detecting extra-terrestrial life, given the speed of interstellar travel and potential number of stars.
12. **(TWO WORD ANSWER)** – Compatibilism is defined as the philosophical position that this idea is reconcilable with determinism. It is commonly defined as the ability for a human to make their own decisions.
13. Group from Greek mythology whose members were Clotho, Lachesis, and Atropos.
14. **(MULTI-WORD ANSWER)** – Taking its title from Thomas Gray's "Elegy Written in a Country Churchyard", this novel focuses on Bathsheba Everdene and her three potential suitors: Gabriel Oak, Sergeant Troy, and William Boldwood.
15. Former U.S. Secretary of the Interior who was sent to prison for his role in the Teapot Dome Scandal.
16. **(MULTI-WORD ANSWER)** – "All temporary things create suffering" and "we desire these things, thus we are constantly reincarnated" are two statements of this Buddhist quartet of principles.
17. European gulf which receives the Neva River.
18. **(TWO WORD ANSWER)** – Quantity equal to the number of valence electrons minus the sum of the number of lone pairs and half the number of bonding electrons.
19. This man, the son of Japanese parents, served as President of Peru between 1990 and 2000.
20. This English novelist wrote a novel about Tom Jones, a lothario who develops feelings for his neighbor's daughter, Sophia Western.

Alphabet Round – Letter F Answers

1. **frameshift**
2. **Frisian**
3. **Faber**
4. **Free Soil** Party (TWO WORD ANSWER)
5. Daniel Chester **French**
6. **free body** diagrams or **free-body** diagrams (HYPHENATED OR TWO WORD ANSWER)
7. Francisco **Franco** y Bahamonde
8. Cesar-Auguste-Jean-Guillaume-Hubert **Franck**
9. **Faust** [accept **Faustus** or Dr. **Faust**]
10. **fur traders** [accept **fur trading**] (TWO WORD ANSWER)
11. Enrico **Fermi**
12. **free will** (TWO WORD ANSWER)
13. **Fates**
14. **Far From the Madding Crowd** (MULTI-WORD ANSWER)
15. Albert Bacon **Fall**
16. **Four Noble Truths** (MULTI-WORD ANSWER)
17. Gulf of **Finland**
18. **formal charge** (TWO WORD ANSWER)
19. Alberto **Fujimori**
20. Henry **Fielding**

Lightning Round

1. Parts of this novel are set at the Palazzo Roccanera (PUH-lats-oh roh-cuh-NAIR-uh), which the author describes as dungeon-like. Late in this novel, it is revealed that Pansy is the illegitimate daughter of Madame Merle. Though this novel's title character rejects the proposals of Lord Warburton and Caspar Goodwood, she does accept the marriage proposal of Gilbert Osmond. Name this novel that documents the choices of Isabel Archer and was written by Henry James.

ANSWER: *The Portrait of a Lady*

2. The Cosiguina (KOSS-ih-gween-uh) Peninsula contains the westernmost point of this nation, which controls the Little and Big Corn Islands. This nation is on the south side of the Gulf of Fonseca, and its city of Bluefields is the most populous along the Mosquito Coast. In December 2014, the Hong Kong-based HKND Group began construction on a canal that will run through its namesake lake, which is the largest in Central America. Situated between Costa Rica and Honduras is what nation whose capital is Managua (mah-NAH-gwah)?

ANSWER: Republic of Nicaragua [or Republica de Nicaragua]

3. The date that ends this period is determined by the appearance of the paschal full moon, and some groups recognize the start of this period on Clean (*) Monday. The RCIA program concludes at the end of this period in the Catholic Church, whose adherents often give up meat on Fridays during this period. This period includes Palm Sunday, and for many faiths it begins on Ash Wednesday. Name this approximately 40 day Christian season which ends at Easter.

ANSWER: Lent [accept Easter Triduum (TRID-ew-um) or Paschal Triduum or Holy Triduum before (*); prompt on "Triduum" before (*); do not accept or prompt on any of the aforementioned answers after (*)]

4. This standard does not currently support the use of the marquee element, which was introduced with the first iteration of Microsoft's IE. This language, whose formalisms are maintained by the W3C, is currently in its fifth iteration. This language's layout can be modified by cascading style sheets, and it typically uses tags denoted by angle brackets to modify content that is retrieved from a web server. Name this language that is used to make web documents.

ANSWER: HTML 5 [or Hypertext Markup Language 5]

5. One ruler of this empire utilized the talents of painter Ustad Mansur (OOSE-tod mahn-"SORE"). The Sayyid ("sigh"-YEED) brothers briefly held influence over this empire, one ruler of which was deposed by members of the Suri Dynasty. It was formed after the First Battle of Panipat (PAH-nih-paht), and its ruler Jahangir (juh-HAHN-geer) was succeeded by the man who commissioned construction of a mausoleum for his wife in the city of Agra, India. Name this Muslim Empire of India ruled by such men as Humayun (hoo-MAH-yoon), Babur (BAH-boor), and Shah Jahan (juh-HAHN).

ANSWER: Mughal (MOH-gul) Empire [or Mogul Empire; accept Mughal Dynasty or Mogul Dynasty or Gurkani]

6. This poet recalled the smell of green tamarinds elating his nostrils in a poem set on a hot autumn night; that poem is entitled "Exotic Perfume." Another of his poems is addressed to the "Hypocrite reader, - my fellow, - my brother!" That poem, "Au Lecteur" (oh LEK-tur), appears in a collection by this author whose sections include "Revolt", "Wine", "Death", and "Spleen and Ideal." Name this author whose poetry appears in the collection *Flowers of Evil*.

ANSWER: Charles Pierre Baudelaire (boh-duh-"LAIR")

7. This man composed the film score to the movie *The Secret Agent* and a film depicting life out of balance titled *Koyaanisqatsi* (coy-ahn-iss-KAHT-zee). One of his operas opens a trilogy that includes *Akhenaten* (AWK-en-aht-en) and *Satyagraha* (sawt-yuh-GRA-hah); that opera includes a scene in which the name "Mr. Bojangles" is repeated fifty-eight times. That opera by this composer is punctuated by knee plays and cryptically makes reference to the title physicist. Name this composer of the opera *Einstein on the Beach*.

ANSWER: Philip Morris Glass

8. To make a graph named after this equation, one takes the natural log of both sides and plots temperature to the minus one power on the x axis. A quantity in this equation is found by multiplying the frequency factor and steric factor, which take into account molecular collisions. The namesake of this equation formulated the idea of activation energy, which appears in it. Name this equation that is used to find the rate constant of a reaction and named after a Swedish scientist.

ANSWER: Arrhenius equation

9. This leader installed Manco (MAHN-koh) as the puppet ruler of a certain empire, and he was the leader of a group dubbed the “Famous Thirteen.” He was killed in response to his brothers’ decision to execute Diego de Almagro. Prior to his execution, Vasco Nunez de Balboa (VOSS-coh NOON-yez day bal-BOH-uh) was captured by troops led by this man. After his victory at the Battle of Cajamarca (kah-hah-MAR-kah), he received a room full of gold from a captive leader whom he subsequently executed in 1533. Name this Spaniard who killed Atahualpa (ah-tah-WAHL-pah) in his conquest of the Incan Empire.

ANSWER: Francisco **Pizarro** Gonzalez

10. This man classified automata (aw-TOM-uh-tuh) as recursively enumerable, context-sensitive, context-free, and regular in a hierarchy of formal grammars. He wrote about the “political economy of the mass media” in *Manufacturing Consent*. This student of Zellig Harris examined the nonsensical sentence “colorless green ideas sleep furiously” in *Syntactical Structures*, which outlines his theory of transformational grammars. Name this influential linguist who taught at MIT.

ANSWER: Avram Noam **Chomsky**

11. Peter Tchaikovsky’s (chy-KOFF-skeez) *The Seasons* was written for this instrument. Carl Czerny (“CHAIR”-nee) and Muzio Clementi both wrote works called *Gradus ad Parnassum*, which contain pieces meant to teach technique for it. John Cage inserted various objects in the strings of this instrument, which are called the “prepared” type. Scott Joplin’s ragtime music was written for what keyboard instrument?

ANSWER: **piano**forte

12. This poem states “Thanks for the heavenly message brought by thee, child of the wandering sea” at the beginning of its fourth stanza. Its title object is composed of “webs of living gauze [that] no more unfurl.” This poem commands “Leave thy low-vaulted past” and “Build thee more stately mansions, O my soul.” It opens by comparing the title animal to a “ship of pearl.” A mollusk is the subject of what poem authored by Oliver Wendell Holmes?

ANSWER: “The **Chambered Nautilus**”

13. In catalase, atoms of this element switch between +3 and +4 oxidation states in detoxifying hydrogen peroxide. The most common form of anemia is one in which this element is deficient in the body. This element is combined with sulfur in proteins such as Co-enzyme Q. This metal is found in the middle of a porphyrin (POR-fuh-rin) ring in a protein that binds to oxygen. Name this metal found in hemoglobin.

ANSWER: **iron**

14. This leader once got into a verbal altercation with Filipino politician Lorenzo Sumulong at a U.N. meeting. This leader’s agricultural policies were influenced by his visit to the Garst family farm. He received spy Rudolf Abel in an exchange for Gary Powers following the U-2 incident. This leader denounced his predecessor in the Secret Speech, and he was ultimately pressured to retire and succeeded by Leonid Brezhnev (LEY-uh-nid BREZH-nef) in 1964. Name this leader of the Soviet Union who succeeded Joseph Stalin.

ANSWER: Nikita Sergeyevich **Khrushchev** (KROOSH-choff)

15. During this event, all Title IX (nine) claims involving sexual assaults went uninvestigated by the Department of Education. It was presaged with Ted Cruz’s 21-hour long filibuster and the placing of 800,000 federal workers on furlough. It ended on October 17th, 2013 after Obama signed a law that extended the debt limit to February of the next year. Name this incident in which bipartisan cooperation broke down, leading to the executive branch’s inability to function.

ANSWER: U.S. **government shutdown** of 2013 [accept obvious equivalents]

16. At the top of this painting a group of people attempt to enter a broken eggshell lying along the shore of a lake. A nude woman balancing a die on her head and a pig wearing a nun’s headdress appear in a portion of this painting that also includes a pair of human ears brandishing a knife. Various figures eat giant fruit in this work, which depicts God’s presentation of Eve to Adam in its left panel. The title location comprises the center panel of what 16th century triptych (TRIP-tik) by Hieronymous Bosch (hee-eh-ROHN-ee-“muss” “bosh”)?

ANSWER: *The **Garden of Earthly Delights*** [or ***Tuin der lusten***]

17. In a contest, this deity used a sword to create three goddesses while her competitor used a necklace to create five gods. This deity was born from the left eye of her father and is worshiped at the Ise (EE-say) Shrine. Uzume's (oo-ZOO-mayz) dancing helped lead this goddess out of a cave in which she hid after acts of rage from her brother Susanowo (soo-SAH-noh-oh). Name the Shinto goddess of the sun.

ANSWER: **Amaterasu**-Omikami (ah-MAH-teh-rah-soo)

18. The Rankine-Froude (ran-KEEN frowd) model of these devices is used to describe their behavior, as is blade element theory. Underwater vehicles often make use of a type of this device whose pitch can be controlled; contra-rotation can be achieved in the "scimitar" type of them. Turbines are often connected to these types of fans, which convert rotational motion into thrust. Name these devices which can be found on the front of airplanes.

ANSWER: **propellers** [or **propeller** blade]

19. One account of this event was written by Reverend William Carwardine. Justice David Brewer issued the unanimous opinion in a Supreme Court case which confirmed Attorney General Richard Olney's right to obtain an injunction in response to this event. Against the wishes of Governor John Altgeld, this event was ended by Federal troops sent in by Grover Cleveland. Eugene V. Debs led the American Railway Union in the organization of what 1894 strike against a namesake, Chicago railroad company?

ANSWER: **Pullman** Strike

20. In one of this author's plays, characters discuss an old man that crawls under a lorry. In that play by this author, the two main characters argue about the phrase "light the kettle" and "light the gas." That drama by this author focuses on two hitmen named Ben and Gus, who receive commands through the title conveyance. The 2005 Nobel Prize in Literature was awarded to what British author of "comedies of menace" such as *The Dumbwaiter*?

ANSWER: Harold **Pinter**