

2015 SCOP Middle School 5

Round 10

Alston Boyd • Brad Fischer • Becca Kobernat • Alec Krueger • Sabrina Lato • Mike Laudermitth
Dylan Minarik • Shayaan Naseer • Dr. Noah Prince • Kristin A. Strey • Brittany Trang • Tyler Vaughan
Shreyas Vissapragada • Michael H. Wong • Yinga Xia

Tossups

1. **A mutation in this organelle's glycosylation pathway results in I-cell [eye-cell] disease. This organelle attaches mannose-6-phosphate at its *cis* face to direct proteins to the lysosome and prepares antibodies in B-cells for release into the bloodstream. This organelle consists of (*) flattened stacks called cisternae [si-STUR-nee]. For 10 points, name this organelle that receives molecules from the ER and modifies them for secretion out of the cell, named for an Italian scientist.**

Answer: Golgi apparatus/body/complex

2. **This organization's viral video, set to a somber rendition of "Everything is Awesome" and showing an Arctic landscape flooding with oil, convinced Lego to end a partnership with Shell. In 1985, the French bombed this organization's ship, the (*) *Rainbow Warrior*, to prevent it from protesting nuclear testing. For 10 points, name this global environmental activist organization, a prominent opponent of nuclear energy with a colorful name.**

Answer: Greenpeace

3. **This organization's Project MKUltra investigated human mind control. In 2006, it was admitted that this organization operated "black sites" in Eastern Europe. This organization funded the Nicaraguan Contras and trained the rebels who landed at the (*) Bay of Pigs, one of many of its attempts to remove Fidel Castro from power. John Brennan currently leads, for 10 points, what governmental spy agency that deals in foreign espionage?**

Answer: Central Intelligence Agency

4. **The puranas recount the churning of one of these things made out of milk which represents an awakening. Jorgumandr [YORE-mun-gahn-dur], the Midgardian Serpent, was thrown into one of these places by Odin. Izanagi dipped his spear into one of these locations to create Japan's islands. At the end of *The Republic* the city of (*) Atlantis falls into one of these geographical features. For 10 points, name these domains which are ruled by the likes of Neptune.**

Answer: oceans (Accept obvious equivalents like sea)

5. In one novel by this author, the death of Juvenal Urbino allows Florentino Ariza to re-profess his love for Fermina Daza. This author's short story "A Very Old Man With Enormous Wings" is a landmark in magical realism, as is his novel about the city of Macondo, founded by José Arcadio (*) Buendia. For 10 points, name this Nobel Prize-winning Colombian author of *Love in the Time of Cholera* and *One Hundred Years of Solitude*, who died in April 2014.

Answer: Gabriel Garcia Marquez (prompt on partial surname)

6. One concept describing this two-dimensional shape involves placing one focal point at infinity. This shape is formed by intersecting a plane with a cone parallel to its slant height. This conic section with eccentricity of (*) 1 can be defined as all points equidistant from its focus and its directrix, which is a line perpendicular to this shape's line of symmetry. For 10 points, name this shape traced by quadratic functions like y equals x squared.

Answer: parabola

7. Leos Janacek dedicated his *Sinfonietta* to the army of this country, his homeland. Bedrich Smetana's *Ma Vlast* depicts this country, including its Vltava River. Another composer from this modern country traveled to America, where he composed the *American* string quartet and the (*) *From the New World* symphony. Antonin Dvorak championed the folk music of, for 10 points, what European country, whose Vltava River flows through the capital of Prague?

Answer: Czech Republic or Czechoslovakia

8. This man described a ruler who kept ten thousand white horses, whose milk was fermented to make koumiss. This man also described the efficient empire-wide postal system and the paper currency used by the Yuan dynasty. He was imprisoned by (*) Genoa upon returning to his home city, and his stories were collected in the book *Il Milione*. For ten points, name this Venetian who met Kublai Khan during his travels on the Silk Road to China.

Answer: Marco Polo

9. Two members of this movement collaborated on *And the Hippos Were Boiled in Their Tanks in 1945*. Another member of this movement wrote "I saw the best minds of my generation destroyed by madness" in the poem "Howl." William Burroughs, Allen Ginsburg, and the author of (*) *On the Road*, Jack Kerouac, were members of, for 10 points, what 1950's American literary movement, stereotyped by bongo-playing poets, that inspired the hippies of the 1960's?

Answer: Beat Generation (accept beatniks)

10. In AC circuits, this quantity's namesake right triangle can be used to find its "apparent" form. Intensity is equal to this quantity over area. In an electrical circuit, this quantity can be expressed as voltage squared over resistance, though it is more commonly denoted as (*) current times voltage. For 10 points, name this physical quantity, the amount of work done or energy used over time, measured in Joules per second, or equivalently, in Watts.

Answer: power (accept specific answers like electric power or mechanical power)

11. **One song about this location was accused of hiding the message "Here's to my sweet Satan" in the lyrics backwards. In "Imagine," John Lennon claims "it's easy" to imagine that this location doesn't exist. A 2012 song asks (*) "Can't I just stay here? Spend the rest of my days here?" as Bruno Mars laments being "Locked Out of" this place. For 10 points, name this mystical location, the destination of a Led Zeppelin "Stairway."**

Answer: Heaven (accept Stairway to Heaven or Locked Out of Heaven)

12. **One scholar of this religion wrote a "Book of Changes" that is one of this religion's "Five Classics." Followers of this religion, whose scholars include Mencius, practice respect for their ancestors and parents, otherwise known as (*) filial piety. Emperors began following this religion after the decline of Legalism. For 10 points, name this philosophy based on the teachings of the Chinese author of the *Analects*.**

Answer: Confucianism

13. **During this man's presidency, Benajmin Bristow uncovered a scandal that included this man's secretary, Orville Babcock, regarding failure to pay taxes on whiskey production and sales. This man, whose presidency was sullied by the (*) Whiskey Ring scandal, was also troubled by the Credit Mobilier scandal and the Panic of 1873. For 10 points, name this President, who had a more successful career as Commanding General of the U.S. Army during the Civil War.**

Answer: Ulysses S. Grant

14. **In this work, Nicholas convinces John to sleep in a tub so he can sleep with Alisoun. A character in this work describes Arcite and Palamon's fight for Emily, and a gap-toothed woman tells of a quest to find what women most desire, and another. The (*) Miller, the Wife of Bath, the Knight, and other pilgrims meet at Tabard Inn in, for 10 points, what collection of short stories written by Geoffrey Chaucer?**

Answer: The Canterbury Tales

15. **The differential scanning form of this device can quantify glass transition and crystallization in polymers. Lavoisier invented one of these devices filled with ice. One of these devices operates at constant volume and can withstand very high (*) pressures; that is the "bomb" type. A simple one can be constructed with a thermometer and two styrofoam cups. For 10 points, name this device commonly used to find the specific heat of a sample.**

Answer: calorimeter

16. **The loser of the first of these events was further threatened by an uprising called the Mercenary War. The Siege of Saguntum triggered the second of these events, while the last was spurred by Cato the Elder's calls for destruction. The second of these conflicts saw (*) Scipio Africanus win the Battle of Zama against a force of war elephants led by Hannibal. For 10 points, name this series of three wars between Rome and Carthage.**

Answer: Punic Wars

17. **An orange grove is visible in the background of this painting, in which flowers flurry around Chloris and her consort. In this painting, a servant rushes to cover the title figure with a pink cloak while Zephyrus, god of the west wind, blows the central goddess to shore on a (*) scallop shell.** For 10 points, name this painting by Sandro Botticelli, which shows the roman goddess of love rising from the sea.

Answer: The **Birth of Venus**

18. **A 2014 paper attempted to solve the firewall paradox surrounding these objects. They undergo evaporation when particle-antiparticle pairs are generated; that radiation is named for the author of *A Brief History of Time* and the aforementioned paper, which argues that these objects have (*) apparent horizons, rather than event horizons.** For 10 points, name these hypothetical regions of space whose gravitational pull prevents even light from escaping.

Answer: **black holes**

19. **Cities in this country include the capital of the IOC, Lausanne, and Davos, which is home to the annual World Economic Forum. It includes Romansh as one of four official languages, and its states, known as cantons, include (*) Lucerne, Geneva, and Zurich.** The Matterhorn lies on this country's southern border with Italy. The International Red Cross is based in, for 10 points, what famously neutral Alpine country with capital Bern?

Answer: **Switzerland**

20. **The protagonist of this work reunites with a friend during a performance of *Lucia di Lammermoor* and claims to be taking piano lessons in Rouen. In this novel, Hippolyte's leg is amputated after a failed attempt to fix his clubfoot. Burdened by debt and failed affairs with Rodolphe (*) Boulanger [boo-lawn-JAY] and Leon Dupuis, the protagonist takes arsenic. Emma, the wife of Charles, is the title character of, for 10 points, what novel by Gustave Flaubert [floh-BAYR]?**

Answer: **Madame Bovary**

Bonuses

1. This city's Bürgerbräukeller was the site of an uprising on November 8th, 1923 supported by Erich Ludendorff. For 10 points each,

[10] Name this Bavarian city, the site of Adolf Hitler's failed Beer Hall Putsch.

Answer: **Munich**

[10] The Beer Hall Putsch sought to overthrow the Weimar [VYE-mar] Republic and bring this political party to power. This party took power in Germany in 1932, establishing the Third Reich.

Answer: **Nazi** Party (accept **Nazis**, **National Socialist** German Workers' Party, **Nationalsozialistische** Deutsche Arbeiterpartei, or **NSDAP**)

[10] In 1934, Hitler ordered this purge of critics, left-wing Nazis, and leaders of the SA, including Ernst Rohm.

Answer: **Night of the Long Knives**(accept **Operation Hummingbird**, or **Nacht der langen Messer**)

2. Not all art is paint on canvas! For 10 points each,

[10] The Japanese artist Hokusai created *The Great Wave of Kanagawa* and thirty-five other views of Mount Fuji; those works are ukiyo-e, which are prints made using carefully crafted, interlocking blocks of this material.

Answer: **wood**

[10] This German artist created a series of woodcuts called *Apocalypse*, but is best known for his engravings like *Melancholia I* and *Saint Jerome in his Study*.

Answer: Albrecht **Dürer**

[10] Scrimshaw is the art of carving and engraving of this material. The artform began among whalers, who had plenty of time while on their ship and plenty of this material from their harvested whales.

Answer: **ivory** or **bone** or **teeth** or **tusks**

3. The Monongahela National Forest is located within this mountain range, whose highest peak, Spruce Knob, marks West Virginia's highest point.

[10] Name this 400-mile long mountain range of central Pennsylvania and West Virginia, which lies between the Cumberland Range and the Poconos.

Answer: **Allegheny** Mountains (do not accept or prompt or reveal Appalachians)

[10] The Alleghenies are a subrange of this dominant mountain range of the Eastern seaboard which stretches from Canada to Alabama.

Answer: **Appalachian** Mountains

[10] The largest cities in the Allegheny Mountains are Altoona and this city, the home of Penn State University.

Answer: **State College**, Pennsylvania

4. The cyclic structure of this molecule was proposed by Friedrich August Kekulé after he dreamed of a snake eating its own tail. For 10 points each,

[10] Name this aromatic molecule with formula C_6H_6 .

Answer: **benzene**

[10] Benzene's relative lack of hydrogens is explained by the presence of three of these stable bonds that alternate with single bonds in the ring.

Answer: **double** bond

[10] However, benzene's double bonds are only theoretical; instead, the overlapping of these orbitals, weaker than the similar sigma orbitals, gives benzene its cyclic nature.

Answer: **pi** orbital

5. In "To a Mouse," this author wrote "The best-laid schemes o' mice an' men/Gang aft agley," which inspired the name of Steinbeck's novel. For 10 points each:

[10] Name this Scottish poet who also wrote the epic poem *Tam O' Shanter*.

Answer: Robert **Burns**

[10] Robert Burns wrote that his love was like a "red, red" one of these flowers "newly sprung in June". Robert Herrick advised to gather the buds of this flower "while ye may" in *To the Virgins, to Make Much of Time*.

Answer: **rose**

[10] Robert Burns asks "Should auld acquaintance be forgot/and never brought to mind?" in the opening to "Auld Lang Syne," a poem now traditionally sung on this holiday.

Answer: **New Year's Eve** (or **New Year's Day**)

6. In one of this man's novels, the title character is adopted by Weedon Scott after being owned by Beauty Smith. For 10 points each,

[10] Name this American author, who wrote about the wild White Fang becoming a domestic dog. His short stories include "To Build a Fire."

Answer: John Griffith "Jack" (Chaney) **London**

[10] In this London novel, contrasted with *White Fang*, Buck becomes wolflike after Manuel steals him from Judge Miller.

Answer: The **Call of the Wild**

[10] Much of *The Call of the Wild* is set in this region of western Canada during a late 19th century gold rush.

Answer: **Klondike** (accept **Yukon** Territory)

7. As these large bodies scrape across mountains and landscape, they generate rocky debris known as till.

For 10 points each,

[10] Give this term for a large, land-based mass of ice.

Answer: **glacier**

[10] A glacier moving into a valley near the sea can cut one of these inlets with steep cliffs into the rock. This geographic feature is often seen in Scandinavia, especially Norway.

Answer: **fjord**

[10] Glacial movement can also generate these amphitheater-shaped valleys, usually known by a French name. These features become tarns when they fill with water.

Answer: **cirque** (or **corrie** or **cwm** [COOM])

8. In 2014, shortly after being diagnosed with Marfan syndrome, Isaiah Austin ceremonially took part in this event. For 10 points each,

[10] Name this annual event. From 2011 to 2014, the Cleveland Cavaliers started this event three times, selecting Kyrie Irving and two Canadians, Anthony Bennett and Andrew Wiggins.

Answer: **National Basketball Association Draft** (prompt on "the Draft")

[10] This ACC school had two first round draft picks in the 2014 Draft: Rodney Hood and the #2 overall selection, Jabari Parker. This school has been coached since 1980 by Mike Krzyzewski [shuh-SHEF-ski].

Answer: **Duke** University

[10] Near the end of the 2014 Draft's first round, the Miami Heat traded up to acquire this Connecticut Huskie. LeBron James tweeted was his "favorite player in the draft," but drafting this player apparently wasn't enough to keep LeBron in Miami.

Answer: Shabazz **Napier**

9. White-tailed deer and white-footed mice are a natural reservoir of this disease. For 10 points each,

[10] Name this infectious disease, usually contracted outdoors, that is identified by its characteristic bull's-eye rash pattern.

Answer: **Lyme** disease

[10] Lyme disease is harbored by the deer variety of this blood-sucking organism, which can be removed using tweezers.

Answer: **tick**

[10] Ticks, rats, and mosquitoes are described by this term, an infected animal that spreads pathogens to other organisms.

Answer: **vector**

10. This case arose from John Adams' controversial lame-duck appointment of "Midnight Judges," whose appointments Thomas Jefferson refused to recognize. For 10 points each,

[10] Name this landmark 1803 case, in which Chief Justice John Marshall established the process of judicial review.

Answer: **Marbury v. Madison** (or the reverse order)

[10] Judicial review is the process by which this body, led by the Chief Justice, invalidates laws that violate the "supreme law of the land," the U.S. Constitution

Answer: **Supreme Court** of the United States

[10] The Supremacy Clause, which makes the Constitution the "supreme law of the land," is found in this article of the Constitution, which also requires members of Congress, judges, and other officers to swear oaths to support the Constitution.

Answer: Article **Six** of the U.S. Constitution

11. This novel was released just months before its home country adopted apartheid. For ten points each,

[10] Identify this South African novel by Alan Paton, in which Stephen Kumalo's son is executed for the murder of Arthur Jarvis.

Answer: **Cry, the Beloved Country**

[10] Stephen Kumalo's son is named for this Biblical son of David, whose name titles a novel by William Faulkner.

Answer: **Absalom**

[10] The murder of Arthur Jarvis takes place in this largest South African city. Later, Stephen travels to this city searching for his sister Gertrude.

Answer: **Johannesburg**

12. This composer of the *Aeneid*-inspired opera *Les Troyens* was commissioned by Niccolò Paganini to compose *Harold in Italy*. For 10 points each,

[10] Name this French Romantic composer of *Symphonie Fantastique*.

Answer: Hector **Berlioz**

[10] Paganini was known primarily as a violin virtuoso, but he commissioned *Harold in Italy* from Berlioz to feature this other string instrument, slightly larger than a violin.

Answer: **viola**

[10] Paganini's commission came after he acquired a viola made by this Italian family. String instruments made by this family have a reputation for superior quality; in 2014, one of their violins, worth \$5 million, was stolen in Milwaukee.

Answer: **Stradivarius** (or **Stradivari**)

13. This type of complex number is a reflection over the real axis, because it is constructed by negating the imaginary part of the original complex number. For 10 points each,

[10] Give this term, which describes the relationship between the complex numbers $a + bi$ and $a - bi$.

Answer: complex **conjugate**

[10] Similarly, the conjugate of a binomial, such as $a + b$, is constructed by changing the addition to subtraction. If a binomial is multiplied by its conjugate, this form is the result.

Answer: **difference of squares** (or **a squared minus b squared**)

[10] Finding the Hermitian conjugate of one of these rectangular arrays of numbers involves taking the complex conjugate of each of its elements and reflecting it over the main diagonal. Two of these objects can be added together only if they have the same number of rows and the same number of columns.

Answer: **matrix** (or **matrices**)

14. One of these questions posed by Bertrand Russell in the 20th century asks about a set that contains all sets that contain themselves. For 10 points each,

[10] Give this term for an apparently self-contradicting, yet apparently true statement.

Answer: **paradox**

[10] A famous paradox asks whether this man will ever catch a walking tortoise, given that in the time it takes this Greek man to reach the tortoise, the tortoise will have moved forward.

Answer: **Achilles**

[10] The question of Achilles versus the tortoise was posed by this Ancient Greek philosopher from Elea.

Answer: **Zeno** of Elea

15. The *Pyramid* and *Coffin* texts are subsections of this larger work. For 10 points each:

[10] Name this Egyptian text, containing many spells, that details the processes of mummification and burial.

Answer: Egyptian **Book of the Dead** (accept **Book of Coming Forth By Day**)

[10] The Egyptians represented many sacred animals in their burial rites, including cats and this small dung beetle. It was frequently used to represent Ra.

Answer: **scarab** beetle

[10] Egyptian gods are often depicted giving life to mummified bodies using this sacred object, a cross with a looped handle that resembles a key.

Answer: **ankh**

16. This phenomenon can occur twice in birefringent materials. For 10 points each,

[10] Name this phenomenon in which a wave changes direction as it enters another medium. A straw appears broken in a glass of water because of this phenomenon.

Answer: **refraction**

[10] A material's index of refraction is the ratio of this quantity in the medium to this quantity in a vacuum. In a vacuum, it is approximately equal to 3×10^8 meters per second.

Answer: **speed of light** (accept **c**)

[10] This law relates the ratio of the sines of the angles of incidence and refraction to the ratio of two indices of refraction.

Answer: **Snell's law**

17. For 10 points each, answer the following about a man who was ejected from the Garden of Eden.

[10] In Christianity, Eve was created from the rib of this first human.

Answer: **Adam**

[10] Adam and Eve were the parents of this farmer, who was condemned to wander the earth for murdering his brother.

Answer: **Cain**

[10] In some traditions, this demon was Adam's first wife. Created as his twin, she left Eden when Adam did not allow this woman to be his equal.

Answer: **Lilith** (accept **Lilit**)

18. Eugene Debs was arrested in the aftermath of this event, after which he became a Socialist. For 10 points each,

[10] Name this railroad strike and boycott that crippled transportation in 1894.

Answer: **Pullman Strike**

[10] This President ordered federal troops to break the Pullman Strike, then established Labor Day as a national holiday to ease tensions. He served two non-consecutive terms as U.S. President.

Answer: Grover **Cleveland**

[10] President Cleveland ordered the end of the strike because it was disrupting this service of the federal government.

Answer: **Mail** delivery

19. This novel opens with a Blodgett College student aspiring to beautify a prairie town with architecture and gardens. For 10 points each,

[10] Name this 1920 novel about Carol Kennicott's dismal, frustrating life in Gopher Prairie, Minnesota, named for the central road of the American rural downtown.

Answer: **Main Street**

[10] This winner of the 1930 Nobel Prize in Literature -- the first American to be so honored -- wrote *Main Street*. He set works like *Arrowsmith* and *Elmer Gantry* in the fictional Midwestern state of Winnemac.

Answer: Sinclair **Lewis**

[10] Winnemac's portrayal of typical, conforming Midwestern life is particularly critical in this 1922 Lewis novel, about the title middle-aged realtor.

Answer: **Babbitt**

20. This organization's members overthrew the Qing Dynasty with the Revolutionary Alliance in 1912. For 10 points each,

[10] Name this Chinese political party, led by Sun Yat-sen until his 1925 death.

Answer: **Kuomintang** (or **KMT**)

[10] After Sun Yat-sen's death, this anti-Communist military leader took control of the Kuomintang and led the Northern Expedition to unify China.

Answer: **Chiang** Kai-shek

[10] This Chairman of the Chinese Communist Party opposed Chiang Kai-shek; after this man's victory in the Chinese Civil War, Kai-shek evacuated to Taiwan.

Answer: **Mao** Zedong