

# New Trier Scobol Solo 2014

## Round 1



1. To explain the ice ages, this scientist proposed that the geometric increase of CO<sub>2</sub> ["C-O-two"] caused atmospheric temperature to increase arithmetically [air-ith-MET-ik-lee], his namesake greenhouse theorem. Taking the natural logarithm of this man's namesake equation and plotting it against  $1/T$  ["one over T"] gives a plot whose slope is a certain quantity times the ideal gas constant. This man's namesake equation contains a pre-exponential factor, and he defined acids as substances that form hydronium ["high"-DROH-nee-um] ions. Identify this namesake of an equation that relates the rate constant to  $e$  to the power of negative activation energy over  $RT$ , a Swedish chemist.

Answer: Svante (August) Arrhenius [uh-RAY-nee-uss]

2. One work by this artist shows Jesus in a white robe under a red blanket being offered grapes and a cup by two angels with bowed heads. In another painting by this artist, a man sits on a stone slab in front of a church, a river, an enormous classical building, and a pyramid. This artist of *The Architect's Dream* painted water overflowing the top of a giant chalice on a grassy knoll in *Titan's Goblet*. *Desolation* is the last work in this artist's series *The Course of Empire*. Northampton, Massachusetts is the setting of this painter's *The Oxbow*. Name this painter who founded the Hudson River School.

Answer: Thomas Cole

3. In a sequel, this character fell in love with his nurse Melissa Macintosh. In the book he originally appears in, this character fears that some blue smoke will kill him, but then learns it is coming from a pipe. This character is later surprised to be arrested instead of that pipe smoker, who rapes Michaela and tosses her out a window. This character starts to care more about his own safety after a failed attempt to save Snowden's life, and he eventually goes AWOL in Rome with Milo Minderbinder. Name this bombardier who tries to avoid dangerous missions during World War II in Joseph Heller's *Catch-22*.

Answer: (Captain) John Yossarian [prompt on John]

4. This event began two years after the French government ratified treaties between Pierre Savorgnan [sa-vorn-yahn] de Brazza and King Makoko. That ratification led to a protest from Portugal when many similar treaties were signed by either France or Belgium. Fourteen countries, including the United States, signed this event's General Act, which included a free trade agreement on Lake Niassa, also known as Lake Malawi. During this event, Portugal proposed a "Pink Map" with Angola and Mozambique united. Name this 1884-to-1885 meeting that addressed the scramble for African colonies, and which was hosted by Otto von Bismarck in his capital.

Answer: Berlin West Africa Conference [accept Congo Conference; do not accept "Congress of Berlin"]

5. China claims part of the Gasa district of this country. The Tiger's Nest Monastery is located in its city of Paro. Its eastern provinces are the home of Tibetan Sharchops. Dzongkha is its national language, but native speakers are only concentrated in the western part of this country. This country's Gangkhar Puensum is believed to be the highest unclimbed mountain in the world. This nation has a Gross National Happiness Commission. Its flag features Druk the Thunder Dragon. This country is separated by the Indian states of Assam and West Bengal from Bangladesh, and by the state of Sikkim from Nepal. Name this country whose capital is Thimphu.

Answer: (Kingdom of) Bhutan [boo-TAHN] [or Druk Yul or Druk Gyalkhap]

6. This leader passed away while a delegation he sent was meeting with Abu Hasan. This person was embarrassed by being forced to kiss the ground in front of Al-Nasir Muhammad. The Mossi Empire conquered his government's capital during one of this man's travels. During this leader's reign, the University of Sankore and a large number of mosques were created. This person became a leader when Abu Bakr II went on an ocean voyage. This leader's General Sagmandia captured the city of Gao, which served as the capital of the Mali Empire. Name this 14<sup>th</sup>-century leader who caused inflation by spending an immense amount of gold on his pilgrimage to Mecca.

Answer: Mansa Musa I [or Kankou Musa or Kankan Musa]

7. The most common type of this ecosystem is connected to a shore without a lagoon, and is classified as fringing. This ecosystem is the home of trunkfish and hawkfish, and fish in this ecosystem generally are flatter and more colorful than other fish. This location grows due to the actions of certain anthozoans, a type of cnidarians [ny-DAIR-ee-unz], allowing it to remain in place when the land from which this system grew out recedes. When these structures are not attached to land, they are classified as atolls. Name these calcium carbonate systems such as the Great Barrier near Queensland, Australia.

Answer: coral reefs [prompt on reefs; prompt on atolls]

8. An annual festival confused the tomb of Djer [JEER] with the tomb of this god and took place in Abydos. When the Apis Bull died, it became associated with this god, and beds were made with holes in the shape of this god that were filled with seeds. Herodotus wrote that the stories about this Egyptian god impacted the stories about Dionysus. A tree grew around a chest that contained this god. This green-skinned father of Horus had his body cut into pieces that, according to some sources, were scattered by his brother Set. He took over the role of god of the underworld from Anubis. Name this Egyptian god who was both the brother and the husband of Isis.

Answer: Osiris [or Asir or Usiris]

9. This musical piece gained popularity when it was performed for its composer shortly after his oratorio *The Light of Life*. The notes in the most popular theme in this piece are, in order: half, eighth, eighth, quarter, half, half. The most famous of this group of six marches is the first one, which is dedicated to Alfred E. Rodewald. That march contains the trio theme known as “Land of Hope and Glory”, and it was played when the composer of this piece received an honorary degree from Yale in 1905. This piece was played more than once at its premier, and it is often played over and over again by school orchestras. Name this Edward Elgar piece played at graduations.

Answer: Pomp and Circumstance Military Marches [prompt on Graduation March]

10. In a poem by Vachel Lindsay, one of these places is described as “creeping through the black / Cutting through the jungle.” In Longfellow’s “Endymion”, one of these places gleams silver-white. Tennyson opens “The Lady of Shalott” by noting that long fields of barley and rye lie on either side of one of these features. In a Langston Hughes poem, the speaker states that “I’ve known (these places) ancient as the world and older than the flow of human blood.” Identify these geographic features, exemplified by a sacred one named Alph in the poem “Kublai Khan” by Samuel Taylor Coleridge, and Vachel Lindsay’s “Congo”.

Answer: rivers

11. The path integral in Green’s theorem is confined to one of these surfaces, but the path integral in Stokes’ theorem is not. Two lines are classified as skew if they are not contained by one of these surfaces. The intersection of two of these surfaces forms a dihedral angle, and if two distinct examples of these surfaces intersect, the intersection is a line. In coordinate geometry, the equation of one of these surfaces often uses its normal vector. In space, this surface can represent the set of points equidistant from two points. The geometry of two dimensions is often named for this surface. Name this flat infinite surface.

Answer: planes [prompt on 2D surface(s) or two-dimensional surface(s)]

12. This leader did not fire Jean-Louis Tauran but did fire Tauran’s colleagues due to a bank money laundering scandal. This leader has praised Walter Kasper, who refers to this man as a radical. This person celebrated his most recent birthday by having breakfast with three homeless men and their dog. During a 2013 press conference, this person asked “Who am I to judge?” in response to a question about homosexuality. He disagreed with Néstor Kirchner over government transparency, and he differs with Cristina Kirchner on abortion and gay marriage. Name this Argentinian, born Jorge Mario Bergoglio, who is now the pontiff of the Catholic Church.

Answer: Pope Francis [accept Jorge Mario Bergoglio before “Jorge”; prompt on the Pope]

13. The precursor to these structures must first be modified by snoRNAs [“snow R-N-A’s”], and those precursors eventually make their way to the pars granulosa before their eventual export. Tetracycline antibiotics work by inhibiting these structures, preventing the binding of a molecule guided by an elongation factor. In prokaryotes these structures’ subunits have sizes of 30 and 50 svedbergs, and they contain A, P, and E sites. These organelles line the surface of the rough endoplasmic reticulum. These organelles are where tRNAs are sent, and are composed of a combination of protein and their namesake RNA. Name these organelles, the site of translation and thus protein synthesis.

Answer: ribosomes

14. Henry Kissinger referred to this former CEO of General Instrument and G. D. Searle as an “occasional adversary and permanent friend”. Anthony Zinni was one of several retired generals who called for this person to resign from the cabinet amid complaints that he too forcefully exerted civilian control over the military. When President Ford fired several moderates from his staff, this man was promoted from Chief of Staff to Secretary of Defense. He later became the only person to be the Secretary of Defense twice. Identify this man replaced by Robert Gates, who was criticized for his handling of the Iraq War under George W. Bush.

Answer: Donald (Henry) Rumsfeld

15. In a play by this writer, Mollie and Giles Ralston run a guesthouse that opens during a huge snowstorm. That play is based on the story “Three Blind Mice”. One novel by this writer takes place after Cassetti kidnapped and murdered Daisy Armstrong in the United States, and that novel involves many of Daisy’s relatives traveling in disguise. One novel by this writer centers around Emily Inglethorp dying of strychnine poisoning and the investigation carried out by a Belgian immigrant. Name this author of *The Mysterious Affair at Styles* and *Murder on the Orient Express* who wrote about the detectives Miss Marple and Hercule Poirot [air-kyool pwah-roh].

Answer: Agatha (Mary Clarissa Miller) Christie [accept either underlined name]

16. A Parisian building designed by this architect, which he referred to as “the dancer raising her tutu”, contains a large film museum and archive. He designed a contemporary art museum in Germany that has a statue of Tupac Shakur in front of it; that building is the MARTa Herford. The molecular studies buildings he designed are at the University of Cincinnati. A museum he designed next to the Nervion River is covered with titanium, while stainless steel covers a concert hall he designed in Los Angeles. Name this architect of the Guggenheim Museum in Bilbao and the Walt Disney Concert Hall, who also designed the Jay Pritzker Pavilion in Chicago.

Answer: Frank Gehry [or Frank Owen Goldberg]

17. The regulation of this industry in the United States increased significantly with the Appleton Rule and the Armstrong Committee investigation in New York. International leaders in this industry are members of the Geneva Association. Businesses in this industry try to protect themselves from adverse selection, and consumers of these business are subject to the doctrine of *uberrima fides*, or utmost good faith. The existence of this industry is blamed for creating moral hazards. Actuaries design underwriting processes for businesses in this industry. Name this industry that provides policies covering home, health, and life, companies in which include State Farm and Allstate.

Answer: insurance

18. In this novel, the great-great-grandmother of one character gave up walking in public after sitting on a lighted stove during an attack by Francis Drake. A character in this novel refers to a magnet as the eighth wonder of the learned alchemists of Macedonia. Another person in this novel is isolated due to a disease that causes insomnia and a complete loss of memory. This novel describes seven generations, most of whom are survived by Úrsula Iguarán, who originally left Riohacha with her husband José Arcadio Buendía and helped him start the town of Macondo. Name this novel by Gabriel García Márquez.

Answer: One Hundred Years of Solitude [or Cien años de soledad]

19. Immanuel Kant and Pierre-Simon Laplace had trouble explaining why this quantity was so low for the sun relative to the planets. This value and energy are both quantized in the Bohr atomic model. When an object absorbs light, this quantity changes by the amount of energy absorbed divided by the light’s angular frequency. This quantity is measured in units of force multiplied by distance multiplied by time, and its derivative with respect to time is torque. The intrinsic form of this value is called spin. Name this conserved quantity equal to moment of inertia times angular velocity.

Answer: angular momentum [do not accept or prompt on “momentum”]

20. To protest the treatment of Anthony Burns, this person stated that the U.S. had made “a covenant with death and an agreement with hell”, and burned a copy of the Constitution. This person is pictured holding a bag between David Wilmot and Horace Greeley in the political cartoon “The Hurly-Burly Pot”. This person and Benjamin Lundy were sued by Francis Todd for publishing a story describing the conditions on Todd’s slave ships. His view of the Constitution caused a rift between him and Frederick Douglass. Name this abolitionist who created the American Anti-Slavery Society and edited *The Liberator*.

Answer: William Lloyd Garrison

- <sup>TB</sup>21. Among this composer’s five cello sonatas is the *Sonata for Cello and Piano in A major* he dedicated to Ignaz Gleichenstein. One of his rondos is nicknamed “Rage Over a Lost Penny”. He named one of his pieces *Sonata quasi una fantasia*, but it was given a more famous nickname by Ludwig Rellstab based on viewings of Lake Lucerne. His fifth and sixth symphonies premiered the same night, and his fifth has a famous short-short-short-long motif. His third symphony was originally dedicated to Napoleon. Name this German composer of *Eroica*, “Für Elise”, and the “Moonlight Sonata”, who used Friedrich Schiller’s “Ode to Joy” in his 9<sup>th</sup> symphony.

Answer: Ludwig van Beethoven

- <sup>TB</sup>22. This compound and carbon dioxide are a products of the reaction catalyzed by zymase [ZY-“mace”]. High use of this compound can lead to thiamine [THY-uh-min] deficiency, which causes Wernicke [VAIR-nih-kee]–Korsakoff syndrome. This compound’s dehydrogenase [dee-hy-DRAH-juh-nayss] converts it to acetaldehyde [uh-see-TAAL-duh-“hide”], and a variation in that enzyme can make this compound cause red skin coloring. That red coloring is commonly found in Asian populations and is known as a flush or a “glow”. Excessive intake of this compound can cause cirrhosis, and this compound is produced when yeast ferment glucose. Name this compound found in beverages such as wine and beer.

Answer: ethanol [or ethyl alcohol]

- <sup>TB</sup>23. Identify the body part that was lost by Captain Ahab to the whale Moby Dick, names a non-hypotenuse side of a right triangle, and is the human lower limb running from hip to ankle.

Answer: legs