2015 SCOP Middle School 5
Round 4

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Tossups

1. **This author wrote of a "narrow fellow in the grass" and said she was an "inebriate of air" and "Debauchee of Dew" in a poem that begins "I taste a liquor never brewed." This poet wrote "hope is a thing with feathers" and "I heard a (*)** fly buzz when I died," and described a carriage that "held but just ourselves and Immortality." The "Belle of Amherst" was, for 10 points, this reclusive American poet who wrote "Because I could not stop for Death."
Answer: Emily Elizabeth **Dickinson**

2. **In the aftermath of this event, Deputy First Minister Nicola Sturgeon was predicted to lead the SNP after the resignation of First Minister Alex Salmond. Talking points in the leadup to this event included student tuition concerns, revenue from oil in the (*)** North Sea, and whether to use the euro, the pound, or a new currency. For 10 points, name this September 18, 2014 event in which 55% of voters in a British country voted against independence.
Answer: 2014 **referendum on Scottish independence** (accept anything relating to a **vote** on whether **Scotland** should become **independent** from the United Kingdom (or (Great) Britain); prompt on partial answers)

3. **This country declared a war after a neighboring country closed the Straits of Tiran to their shipping, then launched Operation Focus, a surprise air strike against that neighbor's air force. This country, whose generals included Ariel Sharon, took the (*)** Sinai Peninsula within a week of fighting. Jordan, Syria, and Egypt were defeated in the Six Day War by, for 10 points, what Middle Eastern Jewish country?
Answer: **Israel**

4. **When the kinetic energy equals the potential energy in a system, the Lagrangian takes this value. The magnetic force on an electron moving parallel to a magnetic field is equal to this value. This is the amount of spin on the Higgs boson, as well as the amount of (*)** mass in a photon and the amount of pressure in a perfect vacuum. For 10 points, name this quantity, equal to the velocity of a stationary mass.
Answer: **zero** (accept equivalents like **nothing**)

5. **At its premier, this work's final movement ended with a girls' choir from St. Paul's School fading out in a nearby room. This suite's composer adapted part of it into music for the hymn "I Vow to Thee, My Country" in 1921. In 2000, Colin Matthews wrote an (*)** eighth movement for this work, titled Pluto, the Renewer. For 10 points, name this orchestral suite by Gustav Holst, whose seven movements include Mars, the Bringer of War, and Neptune, the Mystic.
Answer: The **Planets**, Op. 32

6. **This state's western region was a neutral "No Man's Land" which was abandoned by its neighbor to comply with the Missouri Compromise. Unassigned Lands in this state were illegally settled by "boomers" and "sooners," who ignored the official start of the (*)** Homestead Act. In the 1830s, the Choctaw people were relocated to territory in this modern state via the Trail of Tears. For 10 points, name this former Indian Territory, a U.S. state north of Texas.
Answer: **Oklahoma**

7. **The size of these objects is called their cardinality, and the union of two of these objects gives any element that is found in either or both of them. The words "null" and (*)** "empty" describe one of these objects with no elements, and these unordered groupings do not include any repeated elements. For 10 points, give this mathematical term for collections of elements, whose intersections are often depicted using Venn diagrams.
Answer: **set**

8. **This property's constant, K_{sp} [K-S-P], is the product of the concentrations of ions, though the common ion effect tends to decrease this property for precipitates. This property typically increases as temperature increases for (*)** solids in liquids, and while silver chloride doesn't have this property in water, a system of rules explain why most other chlorides do. For 10 points, name this property, the ability of one compound to dissolve in another.
Answer: **solubility** (accept word forms like **soluble**; prompt on "miscibility" or word forms)

9. **This deity turned the shepherd Battus to stone when he didn't keep his promise and, along with Aegipan, he recovered sinews from Typhon. In one myth, this god lulled the 100-eyed Argus to sleep, and he saved Odysseus from (*)** Calypso and Circe. This son of Maia stole Apollo's cattle and created the first lyre, and his staff was called Caduceus [kah-doo-see-us]. The counterpart of the Roman god Mercury is, for 10 points, what Greek messenger god with winged sandals?
Answer: **Hermes** (accept **Mercury** until it is read)

10. **One character in this work jokingly dates her love to the day she saw Pemberley estate, and Charlotte Lucas marries Mr. Collins after her friend rejects him. This novel begins when Netherfield is rented by a "single man in (*)** possession of a good fortune," and in it, Lydia marries Mr. Wickham and Jane weds Mr. Bingley. Elizabeth Bennet and Mr. Darcy overcome poor first impressions in, for 10 points, what novel by Jane Austen?
Answer: **Pride and Prejudice**

11. **According to legend, one advisor to this ruler built some fake villages along the Dnieper River before a visit to the newly-acquired Crimea region. The Partitions of Poland and the colonization of Alaska took place during the reign of this friend of** (*) Grigory Potemkin, who came to power after the death of her husband, Peter III. For 10 points, name this 18th century "enlightened despot," an Empress of Russia.
Answer: **Catherine the Great** or **Catherine II**

12. **In this work, the protagonist's path is blocked by a leopard, a lion, and a she-wolf. That protagonist sees Count Ugolino eating Archbishop Ruggieri, and witnesses the punishment of Paolo and Francesca da Rimini. The narrator passes through a gate inscribed with the words** (*) "Abandon all hope, ye who enter here." For 10 points, identify this first part of *The Divine Comedy,* in which Virgil guides Dante on a tour through hell.
Answer: The **Inferno** (prompt on The **Divine Comedy** or La **Divina commedia** before mention)

13. **The Darien Scheme was a failed attempt to create this structure. Ferdinand de Lesseps was arrested for bribery related to a plan for this structure, which failed due to landslides and yellow fever. The Hay-Bunau-Varilla Treaty allowed the** (*) U.S. to build this structure after its country declared independence from Colombia. For 10 points, name this 48-mile long structure, whose three locks allow ships to cut across Central America.
Answer: **Panama Canal**

14. **The T2 type of these were labeled with radioactive sulfur and phosphorus in the Hershey-Chase experiment. Latency results when these entities enter a lysogenic cycle. The first discovered one of these causes tobacco mosaic disease, and AZT is a** (*) treatment for a widespread retro- one. A protein capsid surrounds these entities, which are unable to reproduce outside a host cell. For 10 points, name these non-living pathogens, such as influenza and HIV.
Answer: **virus**es (accept **bacteriophage** and **phage** before "tobacco" is mentioned)

15. **A "tl;dr" [T-L-D-R] Wikipedia entry asserts that this restaurant's head chef is a microwave. In a 300-slide presentation, the hedge fund Starboard slammed this restaurant for getting longer warranties on their pots by not salting their** (*) pasta water. In September 2014, it sold $100 passes for seven weeks of all-you-can-eat food. For 10 points, name this Italian chain restaurant which offers unlimited salad and breadsticks with its "Never-Ending Pasta Bowl."
Answer: **Olive Garden**

16. **One character in this novel hears his companions called "mule drivers" and "mud diggers." The protagonist abandons a "tattered soldier" after a battle and allows an injury from being hit with a rifle to be mistaken for a bullet wound, the title** (*) mark he longs for. Jim Conklin dies refusing help in, for 10 points, this novel about Union soldier Henry Fleming, a work by Stephen Crane.
Answer: The **Red Badge of Courage**

17. **After insulting the gods, this figure fled to Franang's Falls disguised as a salmon. This god's daughter rules a namesake underworld, and earthquakes are the result of this god writhing in pain as he is punished for tricking Hodr into killing Baldr. He is the lover of the giantess (*)** Angrboda, and is often depicted as a part-giant shapeshifter. For 10 points, name this Norse trickster god.
Answer: **Loki**

18. **This quantity is measured by a hygrometer and is found by relating the partial pressure of water vapor to the vapor pressure of liquid water. This quantity is maximized when the air temperature is equal to the dew point, when condensation will occur. It is often given as a (*)** percentage in weather reports, where it is combined with temperature to calculate the heat index. For 10 points, give this measure of the level of water vapor in the air.
Answer: relative **humidity**

19. **This event, a violation of the Boland Amendment, resulted in three felony convictions for Oliver North. It was investigated by the Tower Commission, which criticized the President for his inattentiveness. Its goal was to suppress the (*)** communist Sandinistas. For 10 points, name this scandal of the Reagan administration in which arms sales to the Middle East funded a Nicaraguan rebel group.
Answer: **Iran-Contra** affair (accept equivalents for "affair," like "incident" or "scandal;" prompt on partial answer)

20. **This work stands opposite a fresco of the Crucifixion in the Santa Maria delle Grazie. One figure in this work spills a shaker of salt with his right arm while clutching a bag. Thomas raises his index finger on one side of the central man, who (*)** stretches his arms over the table next to a very feminine Apostle John. For 10 points, name this mural by Leonardo da Vinci depicting the twelve disciples with Jesus at his final meal.
Answer: The **Last Supper** (accept Il **Cenacolo** or L'**Ultima Cena**)

Bonuses

1. It may not pay as much as a private sector job, but working in Washington does have its benefits. For 10 points each,
[10] This is the annual salary of the President, not counting benefits or expense accounts. Thanks to a pay raise in 1999, this number is currently double the amount that President Clinton earned.
Answer: $**400,000** (**four hundred thousand** dollars)
[10] Congressional salaries are determined by Congress itself, and until 1992, Congress could simply vote itself a pay raise. This most recently ratified amendment to the U.S. Constitution requires Congressional pay raises to take effect during the next term.
Answer: **27**th Amendment to the U.S. Constitution
[10] In addition, members of Congress have a limited form of this privilege, the free use of the postal service for official business.
Answer: **frank**ing

2. A twentiety-century American artist depicted himself looking in a mirror and sketching a much younger version of his face. For 10 points each,
[10] Name this art genre, in which an artist creates a depiction of him- or herself.
Answer: **self-portrait** (prompt on "portrait" alone)
[10] This artist of the *Four Freedoms* series created *Triple Self-Portrait* and painted a young girl being escorted to a newly desegregated school in *The Problem We All Live With*.
Answer: Norman Perceval **Rockwell**
[10] Rockwell painted most of his works, like the *Four Freedoms* and *Triple Self-Portrait*, for this newspaper, which, despite its name, now publishes twice monthly.
Answer: **Saturday Evening Post** (prompt on "Post" alone)

3. Milady de Winter is the subject of D'Artagnan's affections in this novel. For 10 points each,
[10] Identify the novel in which Athos, Porthos, and Aramis first appear. Cardinal Richelieu is the antagonist of this novel.
Answer: The **Three Musketeers** (accept Les **Trois Mousquetairs**)
[10] *The Three Musketeers* was written by this French author, who also wrote *The Count of Monte Cristo* and *The Vicomte of Bragelonne: Ten Years Later*.
Answer: Alexandre **Dumas** pere
[10] This mysterious character titles the third section of *The Vicomte of Bragelonne*, and is the twin brother of Louis the XIV [fourteenth] of France.
Answer: The **Man in the Iron Mask** (accept; L'**Homme au Masque de Fer** or **Philippe**; prompt; Eustache Dauger)

4. This capital city, which lies on the Gulf of Gonave, was renamed in 1793 by Jean-Jacques Dessalines. For 10 points each,

[10] Name this Caribbean city, which lay only 16 miles from the epicenter of a devastating January 2010 earthquake.

Answer: **Port-au-Prince**

[10] Port-au-Prince is the capital of this Caribbean nation, which borders the Dominican Republic.

Answer: **Haiti**

[10] Haiti and the Dominican Republic share this island, where Christopher Columbus' *Santa Maria* sank on his first voyage to the Americas.

Answer: **Hispaniola**

5. Answer some questions about motherly goddesses, for 10 points each.

[10] This Greek equivalent of Vesta is actually a virgin, but was the goddess of family as well as the home and hearth.

Answer: **Hestia**

[10] Hathor, an Egyptian goddess sometimes known as the mother of Ra, represented motherhood and was symbolized by this hooved animal.

Answer: **cow** (accept **cattle**)

[10] The female member of the Egyptian creator pair, Nut [noot], was the mother of many gods of Egyptian religion, and represented this celestial location. Nut was often painted as a blue woman arched over her husband, Geb, who represents the Earth.

Answer: **sky** (accept the **stars**, the **heavens**, or other equivalents)

6. Most carbon dioxide generated by the body is a product of this cellular respiration pathway. For 10 points each,

[10] Name this metabolic cycle that follows glycolysis and transfers the energy in acetyl-CoA [koh-ay] to electron-carriers like NADH and $FADH_2$.

Answer: **citric acid** cycle (accept "**Krebs** cycle;" accept "**tricarboxylic acid** cycle" or "**TCA** cycle")

[10] The reactions of the citric acid cycle occur in the matrix of this eukaryotic organelle. This "powerhouse" of the cell is where most ATP energy is produced.

Answer: **mitochondria** (accept **mitochondrion**)

[10] Unlike fermentation, the citric acid cycle is considered this type of process because it only occurs when free oxygen is available. Microbes of this type only grow in the presence of oxygen.

Answer: **aerobic** (do not accept "anaerobic")

7. When Nazi Germany invaded and conquered a country, they supported pro-German governments to rule the new territory. For 10 points each,

[10] Philippe Pétain [pay-TAAN], a former war hero at the Battle of Verdun, was appointed leader of the Vichy puppet government in this country, which signed a peace treaty with the Germans in 1940.

Answer: **France**

[10] This country allied with the Germans under Miklos Horthy until 1944, when the Soviet army invaded and Hitler replaced Horthy with Ferenc Szalasi. Shortly thereafter, the Soviets began a siege of this country's capital, Budapest.

Answer: Kingdom of **Hungary**

[10] As the Germans invaded Norway in 1940, this man led a Nazi-supported coup; he later led Norway as a collaborationist state. After the war, he was convicted of high treason and executed, and his name remains a Norwegian synonym for "traitor."

Answer: Vidkun **Quisling**

8. A minor character in this work is Clarisse McClellan, a freethinking teenager who is hit by a car. For 10 points each,

[10] Name this book with protagonist Guy Montag, named for what the author believed to be the temperature at which paper ignites.

Answer: **Fahrenheit 451**

[10] *Fahrenheit 451* was written by this science fiction author, who also wrote *Something Wicked This Way Comes*.

Answer: Ray Douglas **Bradbury**

[10] Bradbury also wrote this collection of short stories, which begins with a rocket turning an Ohio winter warm. The story "There Will Come Soft Rains," an entry in this collection, depicts an automatic house after a nuclear holocaust.

Answer: The **Martian Chronicles**

9. Newton originally wrote his second law as force equals the derivative of this quantity. For 10 points each,

[10] Name this quantity, given by mass times velocity, that is conserved in all collisions.

Answer: linear **momentum** (do not accept "angular momentum")

[10] While momentum is conserved in this type of collision, kinetic energy is not. A bouncing ball undergoes these collisions because energy is continually lost until the ball comes to rest.

Answer: **inelastic** collisions

[10] In a *perfectly* inelastic collision between two bodies, this happens to the two bodies.

Answer: the two bodies **stick together** (accept any similar description)

10. At a staff party at this network, newscaster and amateur magician Carl Kasell performed the "sawing legal affairs correspondent Nina Totenberg in half" illusion. For 10 points each,

[10] Name this radio network, which produces the news programs *Morning Edition* and *All Things Considered* and distributes *Fresh Air* and *Car Talk*.

Answer: **N**ational **P**ublic **R**adio

[10] In 2014, Carl Kasell retired as Scorekeeper for this NPR news quiz show, hosted by Peter Sagal. Even in retirement, though, Kasell continues to record voicemail messages as prizes for listeners of this show.

Answer: **Wait Wait...Don't Tell Me!**

[10] *Wait Wait...Don't Tell Me!* welcomes panelists like writer and voice actor Tom Bodett, famous as the voice of this American hotel chain's slogan, "We'll leave the light on for you."

Answer: **Motel 6**

11. This man achieved his goals using satyagraha, or the force of truth. For ten points each:

[10] Name this leader who advocated nonviolence to help India achieve independence. In 1948, he was assassinated by Nathuram Godse.

Answer: Mohandas Karamchand **Gandhi** (or Mahatma Gandhi)

[10] In the early 1930s, Mahatma Gandhi fasted to gain civil rights for this lowest caste of Indian society, whom Gandhi called Harijan, or children of Vishnu.

Answer: **untouchable**s (accept **Dalit**)

[10] Gandhi began his political activism fighting for the civil rights of Indians in this country. Until 1994, this country was the home of the system of racial segregation called apartheid.

Answer: **South Africa**

12. The subject of this Franz Schubert lieder is addressed as "Maiden mild;" unusually, this song is not a setting of the prayer of the same name. For 10 points each,

[10] Name this song, whose Latin name translates to "Hail Mary."

Answer: **Ave Maria**

[10] Charles Gounod set the Ave Maria to music from this German composer's *Well Tempered Clavier*. This Baroque composer's other religiously inspired works include a *Mass in B Minor*.

Answer: **J**ohann **S**ebastian **Bach** (prompt on "Bach")

[10] Bach was well known as a player of this instrument, for which he wrote a famous *Toccata and Fugue in D Minor*.

Answer: (pipe) **organ**

13. Nucleic acids and proteins are biological examples of these molecules. For 10 points each,

[10] Name these long-chained molecules composed of many monomers. Examples include nylon and polystyrene.

Answer: **polymer**s

[10] This polymer has an ethylene monomer with a substituted chlorine. It has recycling code 3 and is widely used in plastic piping.

Answer: **PVC** (accept **polyvinylchloride**; prompt on "polychloroethylene")

[10] This type of fossilized tree resin, often turned into jewelry, is a naturally-occurring polymer.

Answer: **amber**

14. The Flynn effect notes that this quantity is generally increasing over time, and so tests measuring it must be re-calibrated every so often to keep the average score at 100. For 10 points each,

[10] Name this quantity, which, surprisingly, only has a moderate correlation with performance on standardized achievement tests.

Answer: **I**ntelligence **Q**uotient (prompt on "intelligence" alone)

[10] An early IQ test based on the Binet scale was developed by researchers at this California university, for which the test is now named.

Answer: **Stanford**-Binet test

[10] A raw score of 130, corresponding to a z-score of 2.00, on the Stanford-Binet test is just shy of the required number to qualify for membership in this largest society for high-IQ individuals, founded in England in 1946.

Answer: **Mensa** International

15. James Weldon Johnson wrote one of these works "of an Ex-Colored Man." For 10 points each,

[10] Name this type of literary work in which the author tells a story of his or her own life.

Answer: **autobiography** (prompt on "biography;" prompt on "memoirs" or similar)

[10] Marjane Satrapi wrote this autobiographical graphic novel about her life in Iran at the time of the Islamic Revolution. It takes its name from the ancient capital of the Persian empire.

Answer: **Persepolis**

[10] This former Maryland slave wrote three autobiographies, including a "Narrative" of his life.

Answer: Frederick **Douglass**

16. This star is the alpha star in the constellation Canis Major, and it forms the Winter Triangle with Procyon and Betelgeuse. For 10 points each,

[10] Name this "dog star," the brightest star in the night sky.

Answer: **Sirius** A

[10] Sirius is an example of this system, as it has a primary star and a companion star; Algol is another example. These systems exhibit gravitational influence within Roche lobes.

Answer: **binary** star system

[10] Sirius A can be found along the main sequence of this diagram that relates absolute magnitude to temperature.

Answer: **H**ertzsprung-**R**ussell diagram

17. In one work by this author, Polynices [pah-lee-nye-sees] raises an army against his brother Eteocles [eh-tay-oh-clees]. For 10 points each,

[10] Identify this ancient author of *Seven Against Thebes* whose *Oresteia* [oh-res-tye-ah] is the only fully-extant Greek trilogy.

Answer: **Aeschylus** [es-kill-us]

[10] In a play by Sophocles, after the deaths of Polynices and Eteocles, their sister Antigone [an-TIH-goh-nee] is sentenced to death for trying to do perform this rite to honor the dead Polynices.

Answer: **bury** him (accept any logical answer that describes "**cover**ing his body with **earth**")

[10] Agamemnon fought for 10 years at a war in this city. He sacrificed his daughter Iphigenia [ih-fih-jen-ah-ya] so his ships could sail to this city, though its walls only fell with the creation of a namesake wooden horse.

Answer: **Troy** (accept **Trojan**)

18. Six different flags have "flown over" Texas; that is, six different countries have existed on Texan land. For 10 points each,

[10] These two European rivals controlled Texan land; one ruled it for three centuries until the independence of Mexico, while the other briefly held a small portion of it as part of the Louisiana Territory. Name *both* European countries.

Answer: **Spain** and **France** (prompt on one answer alone)

[10] Texas gained its independence from Mexico in 1836, forming the independent Republic of Texas, which lasted until this U.S. President officially completed the annexation of Texas in December 1845.

Answer: James K(nox) **Polk**

[10] The sixth flag over Texas belonged to this nation, led by Jefferson Davis, which Texas joined on March 2, 1861.

Answer: **C**onfederate **S**tates of **A**merica (accept **Confederacy** and other word forms)

19. Answer the following about women in the Old Testament, for 10 points each.

[10] This niece of Mordecai became a Persian queen, and intervened with King Xerxes to save the Jewish people.

Answer: **Esther** (accept **Hadassah**)

[10] Deborah was the only woman known to hold this title as the leader of the Tribes of Israel. Other people to hold this position included Gideon.

Answer: **Judge**s of Israel (accept **shofet** or **shoftim**; do not accept "King" or similar answers)

[10] This Judge harvested honey from the corpse of a lion and defeated many Philistines, but lost his incredible strength when his hair was cut by Delilah.

Answer: **Samson**

20. Spotify has used one of these processes named for Fisher and Yates to shuffle playlists, but Spotify users were unhappy with perceived lack of randomness in the shuffled lists. For 10 points each,
[10] Give this term for a finite list of step-by-step instructions to be carried out, usually by a computer program.

Answer: **algorithm**

[10] The Fisher-Yates algorithm randomly generates these rearrangements of the elements of a finite set.

Answer: **permutation**s (accept "n **P** r"; accept self-**bijection**s; do not accept or prompt on "combination")

[10] The number of permutations of a set of n elements is equal to this function of *n*, written as "*n* exclamation point." This function of 5 is equal to 5 times 4 times 3 times 2 times 1.

Answer: **factorial**