

# Scobol Solo 2017

## Packet 13 (Round 13)



1. A cat whisker is used to control the growth of these substances in a method called streak seeding. The energy of these substances is proportional to the the product of the number of ions and their charges [pause] according to the Kap·us·tin·skii equation. When these substances are almost perfect, they absorb X-rays less than usual, which is called the Borrmann effect and applies when these substances are used in Bragg reflection. These substances can be classified according to a system developed by Auguste Bravais [oh-goost brah-vay], some types in which are ortho-rhombic and mono-clinic. Name these solids in that have a regular lattice structure.

Answer: crystals [or crystalline substances; prompt on solids]

2. In one play by this writer, the main character gave up a child who turns out to have been adopted by the founder of the Institute for Brain Science, Jerry Krohl, a fact that comes to light as part of Hilary's studies of consciousness in *The Hard Problem*. In another play by this author, a character complains that he wasn't paid and lost money betting on certainties, and states "Life is a gamble, at terrible odds—if it was a bet you wouldn't take it." This author wrote a play in which Bernard Nightingale investigates whether Ezra Chater was killed in a duel by Lord Byron, but Chater actually backed out of the duel with Septimus Hodge, the tutor of Thomasina Coverly. Name this playwright of *Arcadia* and *Rosencrantz and Guildenstern Are Dead*.

Answer: Tom Stoppard [or Tomáš Straussler]

3. To the south of this country are the Campbell Plateau and the Chatham Rise, both of which are submerged portions of the microcontinent that shares its name with this country. Natives in the town of Waitara [WY-tar-ah] fought European colonizers in this country's First Tara-naki War. This country's most populous city is on the Hauraki Gulf, just south of the Great Barrier Island. This country oversees the foreign affairs of the Cook Islands, and this country's capital overlooks the Cook Strait from its position on the North Island. Name this country whose natives are the Maori [may-OR-ee] people.

Answer: New Zealand [or Aotearoa]

4. After Manteo traveled to England twice, he was made the duke of Dasa-mon-gue-ponke [DASS-uh-mahn-gay-PAHNK] and this location. The navigator Simon Fernandes was supposed to take his crew to a different location, but he took them to this place and refused to allow them back on the ship despite the wishes of John White. Thomas Harriot accompanied early explorations of this location. When John White returned to this location, he found the word “Croatoan” [KROH-uh-TOH-un] carved into wood but could not find any settlers, including his granddaughter Virginia Dare. Name this “lost colony” started by Sir Walter Raleigh in what is now North Carolina.

Answer: Roanoke Colony [or Roanoke Island]

5. An odd prime number can be written as a sum of two perfect squares if and only if, when divided by this number, it leaves a remainder of 1. The smallest non-cyclic group has this number of elements and is named for Felix Klein. Polychora [pah-lee-KOR-uh] are shapes in this number of dimensions, which is also the number of dimensions of Minkowski space. This is the maximum number of intersection points of two ellipses, as well as the maximum total number of intersections between a circle and the axes. Identify this smallest composite number.

Answer: four

**Check the score.**

6. One poem by this writer is narrated by a man called a “grey-beard loon.” This writer said of the other character in that poem “He went like one that hath been stunned, / And is of sense forlorn: / A sadder and a wiser man, / He rose the morrow morn.” In another poem by this writer, “A mighty fountain momentarily was forced” to fling up “the sacred river”, and the narrator dreams of having being fed honeydew and having “drunk the milk of Paradise”. This writer set that poem in a “stately pleasure-dome” in Xanadu [ZAN-uh-doo]. Name this poet who worked with William Wordsworth on *Lyrical Ballads*, contributing *The Rime of the Ancient Mariner* and “Kubla Khan”.

Answer: Samuel Taylor Coleridge

7. This composer’s violin concerto has a first section that ends with a low B on the bassoon and is labeled “Allegro molto appassionato” [ahl-LEG-groh MOHL-toh ahp-pahss-ee-oh-NAH-toh]. That concerto in E minor was premiered by this composer’s friend Ferdinand David. The numbering of this composer’s symphonies used to be controversial because he wrote 12 symphonies before turning 15 years old that are numbered separately, and the *Lobgesang* [“LOBE”-guh-sahng] was published posthumously but called his second symphony. This composer’s Scottish symphony was written after his Italian symphony, though they are numbered otherwise. Name this composer whose “Wedding March” is in his incidental music for *A Midsummer Night’s Dream*.

Answer: (Jakob Ludwig) Felix Mendelssohn(-Bartholdy)

8. One of these creatures attacked Hercules and Hera but was distracted when Zeus made him fall in love with Hera. To fight against these creatures, Zeus took all plants and prevented new ones from growing. One of these creatures, Enceladus [en-SEL-uh-duss], was buried under Mount Etna. Another of these creatures stole cattle from Helios and was killed by Hercules after being dragged away from his homeland. These creatures, including Porphyryon [por-“FEAR”-ee-ahn] and Alcyoneus [al-“SIGH-oh-noose”], were born after Cronus castrated Uranus. Name this type of person, one of whom appears in First Samuel as a Philistine champion named Goliath.

Answer: giants or gigantes [prompt on humans or people or similar answers; prompt on answers specifying largeness without using the word giant, until “Philistine”, after which just accept any descriptive answer referring to largeness]

9. A predecessor to this modern country was ruled in the early 20th century by Sayyid Mohammed Abdullah Hassan, who was nicknamed “the Mad Mullah” and established the Dervish State. Abdul-lahi [ahb-dool-LAH-hee] Issa Mohamud and Muhammad Haji Ibrahim Egal formed this country’s first government in 1960 from what used to be British and Italian colonies. When the government formed by Siad Barre [syahd bar] collapsed in 1991, this country became a failed state, and a U.S. effort to help went downhill after the Black Hawk Down incident. A recent civil war in this country led many citizens to become pirates in the Indian Ocean, Arabian Sea, and Gulf of Aden. Name this country on the Horn of Africa, east of Ethiopia.

Answer: (Federal Republic of) Somalia [or (Jamhuuriyadda Federaalka) Soomaaliya]

10. The union-find structure is an implementation of this abstract data type used in Kruskal’s [KRUS-kul’s] algorithm. This data type can be implemented probabilistically using a Bloom filter. The most common Java implementation of this abstract data type uses a HashMap from keys to an object called “present”. A bag is a generalized version of this data type that allows repeats, but normally this abstract data type does not allow repeated items and has no order, both of which make it different from a list. Name this data type that, like its analogue in regular mathematics, consists of elements.

Answer: set(s) [accept (java.util.)HashSet after “HashMap”; prompt on collection before “HashMap”]

### ***Check the score.***

11. This character receives a letter delivered by a hungry girl, whom he tells to go to the mother for some food. After reading that letter with his wife, this man takes money that was supposed to be used to send his son to Saint Chad’s College and uses it to travel to visit his sister Gertrude, who has become a prostitute. This man looks for his son, who is accused of murder, and he meets the murder victim’s father James Jarvis. This man’s son is Absalom. Name this Zulu priest who travels from Ndotsheni [en-“dote”-SHAY-nee] to Johannesburg in Alan Paton’s [PAY-tun’s] *Cry, the Beloved Country*.

Answer: Stephen Kumalo [prompt on Kumalo; accept Reverend Kumalo]

12. This person wrote “Buddhism promises nothing, but actually fulfills; Christianity promises everything, but fulfills nothing.” In some translations of the same book, this person calls Jesus an idiot. This author of *The Antichrist* wrote a book in which a person lives in the mountains for ten years and then says to the Sun “You great star, what would your happiness be had you not those for whom you shine?”. In that book, this writer sets a goal for humanity of not receiving values from God; that goal is tied to this writer’s belief in the Übermensch [UR-bur-mensh] and his statement “God is dead.” Name this German philosopher who wrote *Thus Spoke Zarathustra*.

Answer: Friedrich (Wilhelm) Nietzsche [NEET-shuh]

13. As an opposition leader, this person strongly opposed the First Reform Act, but he later accepted the act when he became prime minister and issued the Tamworth Manifesto. The second time this person became Prime Minister, he banned boys under the age of ten and all women from working underground with the Mines Act. This person became prime minister thanks to the support of William IV, who acted on the recommendation of this person’s mentor, the Duke of Wellington. This prime minister reached across party lines to repeal the Corn Laws. Name this Conservative Prime Minister during the 1830s and ’40s who modernized the police force, which is why London police nicknames are based on his name.

Answer: Robert “Bobbie” Peel

14. Art historians have had trouble determining whether some paintings were by this artist or by Bartolomeo Manfredi [bar-toh-loh-MAY-oh mahn-FRAY-dee], including *Mars Chastising Cupid*. In one painting by this artist, a wealthy young man is having his ring stolen by a young woman with a white turban. This painter of *The Fortune Teller* often portrayed decapitated heads, such as in *David with the Head of Goliath*, *The Beheading of Saint John the Baptist*, and *Judith Beheading Holofernes* [hoh-loh-FUR-nee-z]. One of his paintings shows a tax collector at a table in the process of becoming an apostle. Name this Italian tenebrist [TEN-uh-rist] painter of *The Calling of Saint Matthew*.

Answer: (Michelangelo da Merisi) Caravaggio [“car”-uh-VAHD-joh] [accept either underlined name; do not prompt on “Michelangelo”]

15. The use of Maxifort in this process produced tomatoes that were less susceptible to bacterial wilt and fusarium [“fuse-AIR”-ee-um] wilt. The hypothetical flowering hormone florigen [FLOR-uh-jen] must be transmissible through this process even though the existence and nature of florigen are unclear. This process often results in callus formation, and it is sometimes followed up with a wax treatment. This process is essentially the artificial version of inosculation [in-AHSS-kyoo-LAY-shun], and only works if there is a fusion of the vascular cambium. Name this process bringing together a root-stock and a scion [“SIGH”-on], often from different plants, to form a single plant.

Answer: grafting

**Check the score.**

16. In October 2017, this country charged an American consulate staffer with espionage and conspiracy. This country is the home of Halkbank [HAHLK-bahnk], whose CEO is believed to have received bribes from a gold dealer arrested in Miami. This country's president is pushing for the release of that businessman, Reza Zarrab [REH-zah Zahr-rahb]. Fifteen security guards from this country have been indicted for attacking peaceful protesters in the United States in 2017. This country is demanding that the U.S. extradite Fethullah Gülen [fet-hoo-LAH goo-LEN] because it claims he supported an attempted coup. Name this country led by Recep Tayyip Erdogan [REH-chep TIE-eep AIR-doh-wahn] that, like Iraq, often has conflicts with its Kurdish population.

Answer: (Republic of) Turkey or Türkiye (Cumhuriyeti)

17. This general created the Second United States Army and placed Robert Bullard in charge of it shortly after Bullard won the Battle of Cantigny [kan-tin-yee]. This person planned the successful Battle of Saint-Mihiel [sahn-mee-yel] and convinced Marshal Ferdinand Foch [fawsh] to allow the attack. When this person taught at West Point, he was given a nickname based on him having commanded Buffalo Soldier regiments, and that nickname was eventually softened to "Black Jack". Name this General of the Armies who led the Punitive Expedition to get Pancho Villa and who headed the American Expeditionary Force during World War One.

Answer: John J(oseph) ("Black Jack") Pershing

18. In one book, a family moves from North Carolina to this state in order to live in a house whose caretaker is Mr. Pluto. That book about 13-year-old Thomas Small was written by Virginia Hamilton. Another book set in this state has a section called "Queer" in which Elmer Cowley assaults a reporter for the *Eagle*, and molestation charges are levied against a teacher, Wing Biddlebaum. In another novel, the main character goes to this state after leaving Sweet Home, and escaped slaves like Paul D. and Sethe [SETH-uh] go to this state after crossing its namesake river. Name this setting of *The House of Dies Drear* and *Beloved* that includes the town of Winesburg.

Answer: Ohio

19. This architect proposed designs for a Museum of Unlimited Growth, and used those designs and pilotis to elevate the museums he designed in Asia, including the Government Museum and Art Gallery in Chandigarh, the Sanskar Kendra in Ahmedabad [ah-MED-uh-bahd], and the National Museum of Western Art in Tokyo. This architect designed a series of apartment buildings known as Unité [oo-nee-tay], exemplified by his Cité radieuse [see-tay rah-dee-ooss] in Marseille [mar-say]. This architect said "A house is a machine to live in." The use of horizontal windows were one of this architect's five points of architecture. Name this Swiss architect whose Villa Savoye [vee-lah sah-v-wah] is an example of International Style architecture.

Answer: Le Corbusier [or Charles-Édouard Jeanneret [sharl ayd-war zhahn-ray]]

20. For developing a spectroscopy [spek-TRAH-skuh-pee] method using X-rays and this effect, Kai Siegbahn [kie SEEG-bahn] won a Nobel Prize; recent efforts have focused on using his technique without an ultra-high vacuum. After experimentally justifying the theory behind this effect, it was said to “[fly] in the face of the thoroughly established facts of interference” by Robert Millikan, who used a particularly clean metal electrode and found a fairly precise value for Planck’s constant. Name this effect in which light shining on metal causes electrons to be ejected, as explained by Albert Einstein.

Answer: photoelectric effect [accept photoelectricity]

***This is the end of regulation. Check the score. If it is tied, proceed to overtime tossups. If it is not tied, the game is over.***

- <sup>TB</sup>21. In a series of eight exchanges with Robert Mundell, this person said that there are three types of exchange rates: floating, fixed, and pegged, of which pegged rates are the worst. In that exchange, this economist predicted that the euro would lead to asynchronous shocks and political strife. With Edmund Phelps, this person supported the idea of a natural rate of unemployment. This person advocated for a negative income tax and the end of professional licensure in his 1962 book connecting democracy to his economic theories, called *Capitalism and Freedom*. Name this Nobel Prize-winning American monetarist.

Answer: Milton Friedman

***If the score is still tied, continue. If it is not tied, the game is over.***

- <sup>TB</sup>22. This country’s Par·ti·do Revo·lu·cion·ario Demo·crát·ico [par-TEE-doh RAY-voh-LOO-see-oh-NAR-ee-oh day-mo] was headed by Carlos Duque [DOO-kay], who lost its 1989 presidential election to Guillermo Endara [gee-AIR-moh en-DAH-rah]. When this country’s government voided that election, the United States used Operation Just Cause to put Endara in power by arresting this country’s dictator Manuel Noriega. The Hay–Bunau-Varilla Treaty of 1903 gave the U.S. control of part of this country; much later, the Torrijos [tor-EE-hohss]-Carter Treaties restored that territory to this country. From 1904 to 1914, that territory was the site of a huge construction project to create a link between the Atlantic and Pacific Oceans. Name this Central American country that contains that canal.

Answer: (Republic of) Panama [or (República de) Panamá]

***If the score is still tied, continue. If it is not tied, the game is over.***

- <sup>TB</sup>23. This company has taken over the companies Annapurna Labs, Goodreads, and Zappos. This company was started in 1994. *The Washington Post* is now owned by the founder of this company, Jeff Bezos [BAY-zohss]. This company creates Fire tablets and Kindle e-readers. Name this Internet-based retailer.

Answer: Amazon.com

***There are no more overtime questions available. If the score is still tied, contact the control room for further instructions. If it is not tied, the game is over.***