

# Scobol Solo 2017

## Packet 3 (Round 3)



1. A character in this novel complains that he ate “For breakfast, turnip-bread—lunch, turnip-stew—supper, turnip-cutlets and turnip salad.” That character is given beans and told to pay later with tobacco. Near the beginning of this novel, a cook prepares a meal for 150 men but finds out that about half are “in the dressing-station or pushing up daisies”; the extra food excites Tjaden [t’YAH-den] but leads to Katczinsky [kut-CHIN-skee] getting angry. The protagonist of this story blames the schoolmaster Kantorek for glorifying war. Name this novel about Paul Bäumer in World War I, written by Erich Maria Remarque [“remark”].

Answer: *All Quiet on the Western Front* [or *Im Westen nichts Neues*]

2. Lenses with no spherical aberration can be designed using this person’s namesake “ovals”, which are pairs of curves generated by setting a linear combination of distances from two fixed points equal to a constant. This mathematician is also the namesake of a set operation that takes two sets, and gives a new set consisting of ordered pairs whose first coordinate is from the first set and whose second coordinate is from the second set. The number of positive roots of a polynomial is at most the number of changes between positive and negative coefficients according to this mathematician’s Rule of Signs. This thinker’s *Discourse on Method* introduced analytic geometry and established the convention of writing points as ordered pairs,  $(x, y)$  [*x comma y*]. Name this 17th-century French mathematician for whom the coordinate plane is named.

Answer: René Descartes [reh-nay day-kart] [prompt on Cartesian]

3. In a speech at Harvard University in September 2017, this person said an opponent of her ideas is a “sycophant of the system”. During that speech, protesters held up signs, including one saying “White Supremacist”. This person is being sued by several states for delaying implementation of a law that helps a certain type of defrauded borrowers. This person oversaw changes in guidelines that allowed a “clear and convincing evidence” standard to be applied to some sexual assault charges. This person is the only Cabinet secretary whose confirmation required a tie-breaking vote from the vice president after she was accused of plagiarism, inexperience, and other problems during her confirmation hearings. Name this current secretary of education.

Answer: (Elisabeth Dee) “Betsy” (Prince) DeVos [prompt on Prince]

4. Following a Franz Liszt [“least”] introduction, several of these pieces make up the *Hexameron* [“hex-AM”-uh-rah-n]. Several Austrian composers wrote these types of pieces for the Vaterl-änd-ischer Künst-ler-ver-ein [VAH-tur-land-EESH-ur KURNST-lur-vuh-ryne] during the 1820s. Johannes Brahms wrote a set of 25 of these musical selections that ends with a fugue. Edward Elgar wrote an Andante [ahn-DAHN-tay] theme as the basis for his *Enigma* works of this type. Johann Sebastian Bach’s set of 30 of these pieces for harpsichord are named after the person believed to be the first performer of them, Johann Goldberg. Give this term for a set of pieces built around a common theme, of which Ludwig van Beethoven wrote a set based on a work by Diabelli.

Answer: variations

5. This leader established a dynasty that the Shunga Empire replaced. This leader gained a lot of territory when Antigonus I Monophthalmus [an-TIG-uh-nuss “the first” mah-nawf-THAL-mus] fought with Seleucus I Nicator [sel-YOO-kus “the first” ny-KAY-tur] on the Seleucid [sel-YOO-sid] Empire’s western front. This leader defeated Bhad-ra-sala, ending the dynasty that Dhana Nanda led. This leader and his son Bindusara [bin-doo-SAR-uh] were advised by Chanakya [CHAH-nuk-yuh], and his empire was expanded by his grandson Ashoka. Name this leader who controlled northern India after Alexander the Great retreated.

Answer: Chandragupta Maurya [accept either; prompt on Chandra or Gupta]

**Check the score.**

6. In one play by this writer, a character spells the word “homosexual” when talking about a relationship he had when he was 15. In another of this writer’s plays, the award-winning architect Martin tells his wife Stevie that he is in love with a goat. One of this writer’s characters claims that his son died in a car accident after swerving to miss a porcupine, though that character actually had no son. After this author’s character George tells that story, Nick and Honey go home. This writer of *The Goat, or Who Is Sylvia?* wrote about Jerry and Peter having a conversation on a bench in Central Park in *The Zoo Story*. Name this author of *Who’s Afraid of Virginia Woolf?*.

Answer: Edward (Franklin) Albee (III)

7. During adsorption, this quantity can be determined using the partial pressure, and by dividing surface coverage by the quantity one minus surface coverage. According to the law of mass action, this quantity is proportional to the product of concentrations. For first-order equations, this quantity involves a constant whose units are reciprocal-seconds, but for second-order equations the constant’s units are inverse-molality-seconds. A system is considered to be in equilibrium when this quantity is the same for the forward and backward reactions. In a multi-step reaction this property is determined by the bottleneck. Name this property that describes how fast a reaction takes place.

Answer: reaction rate [or rate of a (chemical) reaction; accept rate constant; accept speed of a reaction]

8. This character sings “They wish they could kill me” and “Diplomat, acrobat, teacher of etiquette” at the beginning of John Corigliano’s [kor-ee-lee-AH-noh’z] opera *The Ghosts of Versailles*. In another opera, this character compares women to “rosy thorns” in the aria “Tutto è disposto” [TOOT-toh ay dees-“POST-oh”] when he suspects that his bride Susanna is cheating on him. In yet another opera, this character complains that everybody wants him to do something in the song “Largo al factotum”, in which he says his name often. This character is a former servant of Count Almaviva. Name this character whose marriage is the title event in a Mozart opera and who is the title character of Rossini’s *The Barber of Seville*.

Answer: Figaro [prompt on the Barber of Seville]

9. In 1964 there was a general strike in this country called the October Revolution, which led to the resignation of Prime Minister Ibrahim Abboud [EE-brah-heem ah-BOOD], who had taken power from Ismail al-Azhari in a 1958 coup. Ismail al-Azhari returned to power in the late 1960s, but another military coup replaced him with Jaafar Nimeiry [JAH-far nee-MAY-ree], who slaughtered several Ansars for believing that the 19th-century person Muhammad Ahmad had been the Islamic messiah figure Mahdi. The current leader of this country came to power during a 1989 coup and used Janjaweed militia to commit genocide in Darfur. Name this African country whose southern portion seceded in 2011.

Answer: Sudan [soo-DAN] [or Republic of the Sudan or Jumhuriyat as-Sudan; accept North Sudan; do not accept or prompt on “South Sudan”]

10. This movement went through the Great Separation of 1827 when most of its members supported Elias Hicks. The founder of this religious movement stated “Christ is come to teach his people himself.” Some of this movement’s services are called “unprogrammed worship” or “silent worship” because people only speak when they feel guided to do so by God. This movement does not vote, using instead a “sense of the meeting” consensus to make decisions. This movement was started in England by George Fox, and it was supported in the U.S. by William Penn. Identify this movement whose common nickname comes from followers “trembl[ing] at the word of the Lord”.

Answer: Quakers or Society of Friends [do not accept “Shaker(s)”]

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

11. These phenomena both cause and can be caused by cabbeling [kuh-BEL-eeng]. When differences in temperature and salinity cause this phenomenon, it is called thermo-haline [“thermo-HAY-line”] circulation. As with wind, the circulation found with these phenomena includes Ekman spirals and creates gyres [JY-urz], and is caused in part by the Coriolis effect. The climate of Northern Europe is warmer than its latitude would suggest because of one of these phenomena, the Gulf Stream. One form of this phenomenon is unscientifically known as “rip tide” and always moves away from shore. Name this type of phenomenon in which ocean water moves continuously.

Answer: ocean currents [prompt on motion or circulation or circulating]

12. When this character is first seen, he shouts “I found it”, referring to a re-agent precipitated by hemoglobin. Stamford states that this character either avoids the laboratory “for weeks, or else he works there from morning to night” in a novel in which Jefferson Hope kills Drebber and Stangerson. In a story, somebody tells this person he is Count Kramm, but this person figures out that Kramm is actually the King of Bohemia. In another story, this character figures out why the Red-Headed League was created. Name this protagonist of *A Study in Scarlet* who tries to stop Professor Moriarty, and who lives at 221B Baker Street with Dr. Watson in stories by Arthur Conan Doyle.

Answer: Sherlock Holmes [accept either underlined part]

13. Soon after this person became prime minister of the United Kingdom, he and Parliament enacted a national minimum wage and passed an act allowing Scotland to elect its own parliament. He gave a speech in Chicago describing his doctrine of international community, which he applied to the Kosovo Crisis. This prime minister, who referred to his centrist policies as the Third Way, gave strong support to the United States war efforts in Afghanistan and Iraq. This person was succeeded by his Chancellor of the Exchequer, Gordon Brown. Name this Labour Party prime minister who succeeded John Major and held power from 1997 to 2007.

Answer: (Anthony) “Tony” (Charles Lynton) Blair

14. Thomas Piketty [taw-mah pee-keh-tee] and Emmanuel Saez [sah-ez] wrote a paper about this phenomenon in the U.S. from 1913 to 1998, citing the Kuznets Curve, which has this phenomenon on the  $y$ -axis. The Theil [“teal”] index and Hoover index both measure this quantity, but the most common method for measuring it is to find the area between the Lorenz curve and a line whose slope is 1, giving a value between 0 and 1: the Gini [“genie”] coefficient. Supply-side economists are criticized for increasing this phenomenon by lowering top tax rates. Give this general term for differences, especially between wealthy people and poor people.

Answer: inequality [accept more specific answers such as income inequality or wealth inequality or economic inequality]

15. A person just right of center in this painting wears a blue outfit and reclines on a purple robe while sitting alone on some stairs and looking at a paper he holds. Another person sitting on the bottom step has his elbow on a small desk and is taking notes. This painting is displayed across the room from *La Disputa* [deess-POO-tah], which is by the same artist, in the Stanza della Segnatura [sen-yah-TOO-rah]. The two most central people in this painting are a person pointing up and his student with his hand forward, and both of them are holding books. Several people in this painting are actually early-16th-century contemporaries of the artist, but are painted as ancient Greek philosophers. Name this painting by Raphael.

Answer: *The School of Athens* [or *Scuola di Atene*]

**Check the score.**

16. This person's formulation of quantum mechanics, in contrast with Erwin Schrödinger's [AIR-vin SHRAY-din-gur'z], uses wavefunctions that are time-independent and operators that are time-dependent. This person's commutator relation gives a nonzero value for the difference of the operator product  $PQ$  minus the product  $QP$ . Another law named for this person states that  $h$ -bar over two [pause] is less than the product of the standard deviations of two measurements if those measurements are of complementary variables. Name this German scientist who stated that for certain pairs of variables, the better one value is known, the worse another is known, in his uncertainty principle.

Answer: Werner (Karl) Heisenberg

17. This poet wrote a verse novel about the murder trial of Count Guido Franceschini [fran-chess-KEE-nee], *The Ring and the Book*. Another poem by this writer describes a woman who "shut the cold out and the storm" and ends by stating "And yet God has not said a word!". Another poem by this author states "Fra Pandolf's hands worked busily a day, and there she stands", and implies that the narrator is planning his next marriage after having ordered the deaths of his past wives. Name this author of "Porphyria's [por-FEER-ee-uh's] Lover" and "My Last Duchess" who married the poet Elizabeth Barrett.

Answer: Robert Browning [prompt on Browning]

18. The Supreme Court ruled that this law was not violated in the *Chicago Board of Trade v. U.S.* decision, which established the "rule of reason" when interpreting this law. On the other hand, the Supreme Court ruled that this law *was* violated in *Northern Securities Company v. U.S.*. This act was used against unions, leading to the passage of a similar act named for Representative Henry De Lamar Clayton. President Theodore Roosevelt used this law more aggressively than his predecessors, and under President Taft it was used to break up Standard Oil. Name this 1890 law that sought to stop anti-competitive business behavior.

Answer: Sherman Antitrust Act [prompt on partial answers]

19. In 2010, an abandoned landmark in this city became the world's largest Bass Pro Shops store. Whites and African-Americans used to hold separate festivals in this city called the Cotton Carnival and the Cotton Makers' Jubilee, which have now merged. This city's main airport is the busiest cargo airport in the U.S. because it's a hub for FedEx Express. Mud Island River Park is in this city, across a harbor from this city's iconic Pyramid building that became a Bass Pro Shop. Near Sun Studio, this city's Beale Street is nicknamed "The Home of the Blues". Name this Mississippi River port city in southwest Tennessee.

Answer: Memphis, Tennessee

20. Injections of this chemical were used to test the two-factor theory of emotion by Stanley Schachter and Jerome Singer. The use of this hormone as an asthma inhaler has decreased significantly over the last decade due to its effect on the heart, but this hormone is still nebulized to treat croup [kroop] and is often injected into patients undergoing cardiac arrest or anaphylaxis. It is the primary catecholamine [kat-uh-KOH-luh-meen] released by the medulla of the gland named for this hormone, which is located above the kidneys. Name this hormone that causes pupil dilation and increased blood flow as part of the fight-or-flight response.

Answer: adrenaline or epinephrine

***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. Donald Kutyna claimed that this person gave him the NASA research that inspired his suggestion to Richard Feynman [FINE-mun] that O-ring failure caused the Space Shuttle *Challenger* to break apart. Late in life, this person started a STEM education foundation now run through the University of California, San Diego. This is the only person who served on both the *Challenger* and *Columbia* committees, and this person twice served as Capsule Communicator on the *Challenger* before it exploded. Name this astronaut who followed Valentina Tereshkova and Svetlana Savitskaya to become the third woman, and the first American woman, in space.

Answer: Sally (Kristen) Ride

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

<sup>TB</sup>22. An arch in this city originally contained the Horses of St. Mark statue stolen from Venice, but now holds up a statue showing Peace riding a chariot. An arch built at the western end of this city's historical axis during the 1980s is in the shape of an open cube. Another arch in this city houses its country's Tomb of the Unknown Soldier and was the site of a German celebration in 1940 and an Allied celebration in 1944. Those arches in this city are the Grande Arche [grahnd arsh] and the Arc de Triomphe. Name this city whose historical axis is along the Champs-Élysées [shahmps eh-lee-zay] and has its east end at the art museum The Louvre [loov-r'].

Answer: Paris, France

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

<sup>TB</sup>23. Some of the great moments in this sport's history have involved Paul Henderson, Pat Lafontaine, and Bobby Orr. This sport is portrayed in the movies *Tooth Fairy*, *Slap Shot*, and *The Mighty Ducks*. Some of the greatest stars of this sport have been Maurice Richard [rih-shard], Gordie Howe, and Wayne Gretzky. The Bruins, Penguins, and Red Wings play this sport. Name this sport in which people try to get a puck past the goalie while skating.

Answer: (ice) hockey

***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.***