

Scobol Solo 2018

Packet 13 (Round 13)



1. The Nagaoka coefficient corrects for imperfections in the shape of this type of device. A choke is a version of this type of device used to eliminate high frequencies. This type of device's reactance is directly proportional to frequency. The voltage across this type of device is proportional to the derivative of current with respect to time. This type of device can have an iron core or an "air core". One can be combined with a capacitor to model a simple harmonic oscillator. Name this type of circuit element whose strength is measured in henries and that usually consists of a coil of wire.

Answer: inductors

2. This goddess sent her grandson to Earth with three gifts to signify his divine lineage, just after her son refused to rule Earth and the Earth's ruler was convinced to rule the underworld. This goddess swallowed her brother's sword and gave birth to three women who became imperial figures. This goddess was born when her father was performing a ritual washing and cleaned out his left eye. This goddess's brother threw a flayed horse at her, causing her to go into hiding until the goddess Uzume [oo-zoo-may] danced on a bathtub and lured this goddess out of her cave so she could look at herself in a mirror. Name this Shinto goddess of the sun.

Answer: Amaterasu [ah-mah-tair-ah-soo](-oho-hiru-me) (Omikami) [or Oho-hir-me-no-muchi]

3. An extremely popular biography of this leader titled for his "life and world" was written by Robert K. Massie. When he was young, this ruler established an elaborate toy army complete with actual grenadiers [gren-uh-DEER]. This monarch separated civil from military service and provided a path for commoners to attain noble status when he established a system of promotion based on merit known as the Table of Ranks. Disguised as a ship-builder, this leader went on a tour across Europe known as the Grand Embassy. In 1713, this leader moved his capital to a city on the Baltic Sea. Name this leader who reformed Russia.

Answer: Peter the Great [or Pyotr Velikiy or Peter I or Peter Alexeyevich; prompt on Peter]

4. In the first scene in this play, one character compares an action to being "whipped at the high cross every morning", drawing the reply "There's small choice in rotten apples." That conversation takes place between Gremio and Hortensio. Two men in this play pretend to be the tutors Cambio and Litio. Later in this play, Gremio describes a wedding in which the groom swore and then slapped the priest; that groom later wins a bet when his wife is more obedient than his friends' wives. Name this William Shakespeare play about the relationship between Petruchio and Katherine.

Answer: *The Taming of the Shrew*

5. The mineral Schreibersite [SHRY-bur-“site”] comprises iron, nickel, and this element, and may help explain the existence of life on Earth. Bone meal is a source of this element and calcium, which is why bone meal is used as a fertilizer. This element is one of the “Big Three” nutrients in plant fertilizer along with nitrogen and potassium. Southern blotting uses a radioactive form of this element to label DNA backbones. The U.S. has banned this element from detergents to prevent algal blooms and forbids the use of the incendiary white allotrope of this element against civilians. Name this element, one of whose acids gives a tangy flavor to soft drinks, whose name comes from its ability to glow in the dark.

Answer: phosphorus [accept P]

Check the score.

6. Instead of the Adopt-a-Highway program that exists in other states, this U.S. state celebrates Green Up Day each May to clean up roadside trash. This state’s most populous city runs completely on renewable energy, contains Church Street Marketplace, and has a population only slightly above 40,000 people. Killington Peak is near the town of Rutland in this state. Students who live in this state’s town of Norwich attend middle school and high school in an adjacent state, in the town of Hanover. This state is the east shore of Lake Champlain, and it contains the Green Mountains. Name this state whose most populous city is Burlington and whose capital is Montpelier [mawnt-PEE-lee-ur].

Answer: Vermont

7. Wu Sangui revolted against this dynasty in the Revolt of the Three Feudatories, though he had helped conquer the previous dynasty, whose last ruler hanged himself in a garden. This dynasty included 60-year reigns by both the Kangxi [kang-shee] emperor and his grandson the Qianlong [chyahn-“long”] emperor. One of this dynasty’s last rulers, the dowager empress Cixi [see-shee], had much of her power taken away by foreign powers during the Boxer Rebellion. Dorgon, who was a regent of this dynasty, mandated that all Chinese men shave their foreheads and wear braids. Name this dynasty whose last emperor, Pu Yi, ended his reign when the Republic of China was established.

Answer: (Great) Qing dynasty or Ching dynasty or Manchu dynasty or Manzu dynasty

8. In one novel by this author, the reply to the secret message “The castle has taken fire” is “Are my books burned?”. The person who replies to that message escapes prison, then has a love affair with his jailer’s daughter, Clelia. In another novel by this author, the protagonist is sent to Besançon [beh-sahn-saw] seminary by Monsieur Chélan [sheh-lan] and tutors the children of Mayor Monsieur de Rênal. The conquests of Napoleon are important in both of those novels by this author. Name this French author who wrote about Fabrice [fah-breess] del Dongo in *The Charterhouse of Parma* and about Julien Sorel in *The Red and the Black*.

Answer: Stendhal [or Marie Henri Beyle]

9. A spacecraft focused on studying this phenomenon was launched in 1994 and uses a 3-D Plasma and Energetic Particle instrument. The termination shock occurs where this phenomenon slows to subsonic speeds. A current scientific debate asks whether extreme ultraviolet radiation or this phenomenon is responsible for stripping the atmosphere from Mars. This phenomenon causes the Earth's magnetic field to not have spherical symmetry, giving it a tail, and this phenomenon also affects the tail direction of comets. Name this stream of charged particles that comes from the Sun.
- Answer: solar wind

10. A painting by this artist shows three rabbits, with two on a hill on the left side and one being chased by a dog on the right. In that painting by this artist, a nude woman holds an olive oil lamp and a clothed woman grasps a large black bowl while a small boy sitting between them reaches into a sarcophagus [sar-KAH-fuh-guss]. This artist of *Sacred and Profane Love* painted a woman holding a red cloth and grasping onto a bull's horn in *The Rape of Europa*. This artist painted cheetahs pulling a chariot in *Bacchus and Ariadne* ["BACK-us and air"-ee-AD-nee] and a maid looking through a chest in the background of a painting in which a sleeping dog sits next to a nude woman on a bed. Name this painter of *Venus of Urbino*.
- Answer: Titian [or Tiziano or Tiziano Vecelli or Tiziano Vecello]

Check the score.

11. One of this person's followers, Osborne Perry Anderson, was given a sword that used to belong to Frederick the Great by George Washington's great grand-nephew, Lewis Washington. Silas Soule tried to free this person from prison shortly before this person was killed. Earlier, this person defeated Henry C. Pate at the Battle of Black Jack, and he then fought against John W. Reid at Osawatomie [os-uh-WAH-tuh-mee] in 1856 in Kansas. This person attacked an armory in the hope that it would start a wide slave rebellion. Name this abolitionist who was stopped by U.S. Marines led by Robert E. Lee in 1859 at Harpers Ferry.
- Answer: John Brown

12. In a verse novel by this author, the narrator and title character says she "Will write my story for my better self" and believes that her cousin Romney is married to Lady Waldemar, who was very unkind to Marian Erle. Another work by this poet proclaims "Call me by my pet-name!". In another poem, this writer claims to perform the main action "with the breath, smiles, tears, of all my life." Name this author of *Aurora Leigh* whose poem asking "How do I love thee?" is in her collection *Sonnets from the Portuguese*.
- Answer: Elizabeth Barrett Browning [prompt on Browning; accept Browning together with any additional information that makes it clear the answer is not "Robert Browning", such as E. or Barrett or the wife]

13. David Fallarino, who told this person he would “have to get creative in terms of income”, reported a burglary of an iPad, a briefcase and a pair of sneakers in late August 2018. This person responded to Fallarino’s message by going to Cindy Laporta. This person recommended Stephen Calk for the position of U.S. Army Secretary when Federal Savings Bank extended this person’s mortgage. This person worked closely with Rick Gates while consulting for Viktor Yanukovich [yah-NOO-koh-vich] in Ukraine. In 2018 this person was found guilty of tax and bank fraud and later pleaded guilty to conspiracy. Name this person who served for eight weeks in 2016 as Donald Trump’s campaign manager.

Answer: Paul (John) Manafort (Jr.)

14. Terpene [TUR-peen] solution can be sprayed on Christmas trees to prevent this process. Cavitation, or the formation of bubbles, blocks this process. Solar stills use a method named for this process when the collection bags are placed over leafy trees. Xerophytes [“zero-fights”] minimize this process by employing CAM photosynthesis and by having spines. This process is the dominant contributor to cloud formation above the Amazon rainforest. Cohesion-tension theory explains the mechanism of this process. The opening of guard cells and closing of stomata regulate this process. Name this process in which water is pulled through the xylem [ZY-lum] of plants by evaporation in the leaves.

Answer: transpiration [prompt on evaporation or evaporating or any reasonable description of losing water]

15. In this musical, two characters fight—one saying “I love margins and discipline / I make lists in my sleep, baby”, the other saying “A tiger in a cage can never see the sun”—in the song “Take Me or Leave Me”. Two characters in this musical sing and dance a “Tango” about a woman who is the ex of one of them and the current girlfriend of the other: Maureen. Before this musical begins, one character earns a lot of money killing an akita [ah-KEE-tah] named Evita, who turns out to have belonged to Benny, and he uses that money to bring gifts to Collins, Mark, and Roger. At the end of this show’s first act, Roger stops avoiding Mimi because he finds out that she, like him, has AIDS. Name this musical about bohemians in the East Village of New York, based loosely on *La bohème* [lah boh-em].

Answer: Rent

Check the score.

16. This author wrote about four African-American boys swimming naked in a swimming hole, two of whom are shot and one of whom shoots their killer, in the story “Big Boy Leaves Home”. In a novel by this author, a chauffeur tries to prevent a girl from making noise near her blind mother, leading him to suffocate the girl with a pillow. That chauffeur then decapitates and incinerates the body of Mary Dalton. This author wrote about moving from Mississippi to Chicago and joining the Communist Party in his memoir *Black Boy*. Name this author of the short story collection *Uncle Tom’s Children* and the novel *Native Son*.

Answer: Richard (Nathaniel) Wright

17. According to the Coase conjecture, this situation will have low prices early on when durable goods are being sold. According to Baxter's law, this situation can extend from regulated industries to unregulated ones. In the perfect form of this system, the Herfindahl-Hirschman [HURF-in-dahl HURSH-mun] Index equals 10,000. The natural version of this market situation can arise if there are high fixed costs and barriers to entry. This situation has similar effects to collusion. Give this term for an economic market in which there is only one producer.

Answer: monopoly [or monopolism or monopolist; do not accept "monopolistic competition"]

18. Religious fanatics called juramentados [hoo-rah-men-TAH-"dose"] terrorized this country by conducting suicide attacks. Three large bells were used to mark the start of the Balangiga [bah-lan-HIG-ah] massacre in this country. An American military officer gained fame by crossing the Bagbag and Pampanga Rivers in this country under heavy fire. Macabebe [may-kay-BAY-bay] scouts in this country pretended to capture Frederick Funston before collaborating with him to capture Emilio Aguinaldo [eh-MEEL-yoh ahg-ee-NAHL-doh]. After leaving this country, General Douglas MacArthur declared "I shall return", a promise he kept. Name this island nation that ended Japanese occupation in 1945 with the Battle of Manila.

Answer: (Republic of the) Philippines [or (Republika ng) Pilipinas

19. An orchestral piece by this composer is written in three parts, the third of which depicts "the morning of a festival day". This composer wrote a set of pieces that includes "The Girl with the Flaxen Hair" and "What the West Wind Saw". *Ibéria* [ee-bair-ee-ah] is the second of this composer's *Images for Orchestra*. The score to an orchestral piece by this composer was published with a reproduction of Hokusai's *Great Wave Off Kanagawa* on the front cover. This composer used a descending chromatic flute solo to open his *Prelude to the Afternoon of a Faun*, and he wrote *La mer*. Name this French composer of *Suite bergamasque*, which includes "Clair de lune."

Answer: (Achille-)Claude Debussy [deh-boo-see]

Check the score.

20. When this function is applied to the period of a dynamical system, the first Feigenbaum constant gives the limiting ratio of bifurcation intervals. The time it takes for exponential functions to be equivalent to this function is calculated with the rule of 72. The Delian [DEE-lee-in] problem from antiquity is an attempt to apply this function to the volume of a cube. If this operation is performed to the side of a tesseract then the hypervolume is multiplied by 16, while when this operation is done to the side of a cube, the volume is multiplied by 8. Name this operation that, when performed to an integer, always results in an even number.

Answer: doubling or times 2 or multiplying by 2 or multiplied by 2 [accept twice or adding to itself]

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.

^{TB}21. A symphony by this composer has led to a debate over the ordering of the inner two movements, the “Andante moderato” and the “Scherzo: Wuchtig” [SKAIRT-soh VOOK-tik]. Another of this composer’s symphonies is partly a musical setting of a poem by Friedrich Klopstock. A minor-key Frère Jacques [frair-eh zhahk] is played by a solo bass to open the third movement of this composer’s first symphony. This composer’s sixth symphony includes three hammer blows and a theme named for this composer’s wife, Alma. This composer’s eighth symphony is nicknamed for the many performers required to play it. Name this composer of symphonies nicknamed *Resurrection* and *Symphony of a Thousand*.

Answer: Gustav Mahler

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

^{TB}22. In this mountain range, the Rainbow subrange contains Resplendent Mountain next to the larger Mount Robson. The town of Echo, which was important in the railroad industry and was a highway junction, is now a nearly deserted part of this range’s Wasatch subrange east of the Great Basin. Part of this range was known as Teewinot [TEE-win-awt] but is now known as the Grand Tetons. Lake Louise is in Banff National Park in the north part of this mountain range. The national park named for this range is near Estes Park, which is northwest of Denver. Name this mountain range of the western United States.

Answer: Rocky Mountains or Rockies

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

^{TB}23. A major river system on this continent contains the Finlay, Peace, Slave, and Mackenzie Rivers. Great Bear Lake is on this continent; so is Lake Huron. Name this continent whose major cities include Guadalajara [GWAH-dah-lah-HAH-rah], Montreal, and Los Angeles.

Answer: North America

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.