

Scobol Solo 2022

Packet 13 (Round 13)

1. In 2017, this person was sentenced to over nine years in prison for money laundering and corruption, but he served less than two years, and his convictions have been nullified. Recently a senate committee in this person's country called for his main political opponent to be jailed because of mishandling of the COVID epidemic. When this person was his country's president, his chief of staff was Dilma Rousseff [JEEL-muh roo-SEFF]. Name this former union leader who won a 2022 runoff election against Jair Bolsonaro [zhah-EER bohl-soh-NAH-roo] to once again become the President of Brazil.

Answer: Luiz Inácio Lula da Silva [accept either underlined name]

2. Given an ortho-normal basis with three elements, applying this operation to two of the elements generates the third element or its opposite. This operation is the first operation performed in a triple product, which can be used to find the volume of a parallelepiped [pair-uh-LELL-uh-"PIE"-ped]. The magnitude of the result of this operation gives the area of a parallelogram, and half the magnitude of the result of this operation gives the area of a triangle. The result of this operation has a magnitude equal to the product of the two original magnitudes times the sine of the angle between two vectors. Name this operation that finds a vector perpendicular to two original vectors.

Answer: cross product [prompt on cross(ing) or vector product]

3. This composer used Arabic melodies by his friend Alexander Borodin when he was working on a piece originally considered this composer's 2nd Symphony. That piece by this composer was also inspired by a story about a gazelle that turned out to be a queen. In another piece, this composer based some movements on Alborada themes, including the final section, "Fandango asturiano" [fahn-DAHNgoh ah-stoo-ree-AH-noh]. A famous piece by this composer started out as an interlude in the opera *The Tale of Tsar Saltan* and quickly alternates between rising and falling. Name this Russian composer of *Antar*, *Capriccio Espagnol* [kah-PREET-choh ess-pahn-YOHL], and "Flight of the Bumblebee".

Answer: Nikolai (Andreyevich) Rimsky-Korsakov

4. In the epilogue of one novel by this author, the title character remembers his words "There's a sort of wrong that can never be made up for" being repeated by Colonel Donnithorne. This author's title character is talking to his younger brother Seth before the Poyser family arrives. In another novel by this author, Camden Farebrother sacrifices his own feelings by helping Fred Vincy get back together with Mary Garth. In that novel, this author portrays Dr. Tertius Lydgate leaving the title town after taking out huge loans. Name this author of *Adam Bede* who wrote about Reverend Edward Casaubon and Dorothea Brooke in *Middlemarch*.

Answer: George Eliot [or Mary Anne Evans]

5. This country lost support from the Soviet Union in the late 1970s when it invaded the neighboring Ogaden [oh-GAH-dayn] region to its west. That war happened when this country was led by Major General Siad Barre [SEE-ud BAR-ray]. Barre was overthrown by Mohamed Farrah Aidid [ay-DEED], who had this country's troops attack United Nations peacekeepers. That action caused the United States to send troops into this country in 1993 in Operation Gothic Serpent, which is described in the book *Black Hawk Down*. Name this country that invaded Ethiopia in 1977 and which killed American soldiers during the Battle of Mogadishu [moh-guh-DEE-shoo].

Answer: Somalia [or Jamhuuriyada Demuqraadiga Soomaaliyeed]

Check the score.

6. To reduce power needs, engineers are exploring replacing MOSFETs ["MOSS"-fets] with field-effect transistors named for this phenomenon. Superconducting Cooper pairs take advantage of this phenomenon at Josephson junctions, which is why Josephson current is sometimes named for this phenomenon. George Gamow [GAM-awff] used this phenomenon to explain why alpha decay is possible. Gerd Binnig and Heinrich Rohrer developed a microscope that takes advantage of this phenomenon. Name this quantum phenomenon in which a wave-function crosses a barrier that cannot be crossed according to classical mechanics.

Answer: (quantum) tunnelling

7. Give a two-word answer. An essay on this concept states "It is one thing to show a man that he is in error, and another to put him in possession of the truth." A book about this concept begins with the section "Of the Different Species of Philosophy" and includes a section stating that descriptions of miracles are self-denunciating. This concept is mentioned in the title of an essay collection that supports the idea of innate ideas, written by Gottfried Leibniz ["LIE"B-nits]. Give this two-word concept that is the subject of an *Enquiry* by David Hume and an *Essay* by John Locke.

Answer: human understanding [accept l'entendement humain]

8. One of this writer's characters is a "retired manufacturer of vermicelli, Italian paste, and starch." This writer describes how that man eventually is not supported by his two daughters even when he becomes deathly ill. Those daughters are Anastasie [ah-nah-stah-see] and Delphine [del-feen], the latter of whom almost marries Rastignac [rahs-ti-nyak] in the *Scenes from private life* section of a large work by this author. That large work by this author portrays a wide range of post-Napoleonic French life. Name this author whose *Père Goriot* [pair gor-ee-oh] is part of his collection *The Human Comedy*.

Answer: Honoré de Balzac

9. These people cannot be barred from state jobs since the 1967 decision *Keyishian* [kee-YISH-ee-un] v. *Board of Regents*. Anita Whitney was imprisoned for supporting these people, and her conviction was upheld in 1927 by the Supreme Court using the “clear and present danger” standard. The Hollywood Ten were jailed for refusing to answer questions as to whether they were this type of person. Joseph Welch asked “Have you no sense of decency?” when he was accused of supporting these people. Name these people who, based on their beliefs, were investigated by the House Un-American Activities Committee and Senator Joseph McCarthy.

Answer: Communists [accept members of the (United States) Communist Workers Party]

10. This is the tallest building designed by David Childs. A horizontal slice halfway up this building is a perfect octagon, and in general the outside of this building consists of eight very large isosceles triangles with four pointing up and four pointing down. This building is near two square memorial pools that each have a waterfall. Including its spire, this building is 1,776 feet tall. If you count the spire, this skyscraper is the tallest building in the Western Hemisphere. Name this building in New York City near where the Twin Towers were destroyed during the 9/11 attacks.

Answer: One World Trade Center [accept One WTC or Freedom Tower]

Check the score.

11. This scientist and a French scientist independently found a relationship between the number of stereo-isomers of an organic compound and the number of asymmetric carbon atoms. A quantity named after this scientist equals the ratio between the actual concentration and the ideal concentration of solute particles. An equation named for this scientist finds the derivative with respect to temperature of the natural log of the equilibrium constant. The factor named for this scientist is used to calculate osmotic [ahss-MAH-tik] pressure and other colligative [kuh-LIG-uh-tiv] properties. Name this Dutch scientist who won the first Nobel Prize in Chemistry.

Answer: Jacobus (Henricus “Henry”) van ’t Hoff (Jr.) [prompt on Hoff or ’t Hoff]

12. One story by this writer begins by mentioning nicknames such as Dungaree Jack, Saleratus [sal-uh-RAY-tuss] Bill, and The Iron Pirate. This author wrote that story about a man who buries his hanged friend. This author of “Tennessee’s Partner” wrote a story including a woman who used to wait tables at Temperance House, who is named Piney Woods, and who joins a group that includes the Duchess and Mother Shipton. That group gets in trouble in a story by this author when Uncle Billy takes their horses. This writer ended that story with John Oakhurst’s suicide note. Name this author of “The Outcasts of Poker Flat”.

Answer: (Francis) Bret Harte

13. One of this person's first followers was Parley P. Pratt, who converted Sidney Rigdon, who became this person's spokesman and made a claim as this person's successor. When this person was in his 30s, he said that he had a vision when he was 14 that taught him that all sects are wrong and that their creeds were an abomination. This person and his brother Hyrum were killed by a mob while being held in jail in Carthage, Illinois. Many of this person's followers then supported Brigham Young. Name this person who used buried golden plates to found the Church of Jesus Christ of Latter-Day Saints.

Answer: Joseph Smith (Jr.)

14. One painting by this artist has a Greek temple and an Italian palace on the rim of a round body of water that is elevated and in places spills onto the land below. That painting by this artist is *The Titan's Goblet*. The New York Historical Society owns a series of five paintings by this artist, the last of which has a large white column in the foreground and a row of columns in the background and is called *Desolation*. This painter began that series with *The Savage State*. Many of this painter's works are set near the Catskill Mountains. Name this painter of *The Course of Empire* who is considered the founder of the Hudson River School.

Answer: Thomas Cole

15. This element in the sun causes two "D" Fraunhofer [FRAWN-haw-fur] lines. Dry lake beds are often a source for mining this element's sulfate and borate, which are respectively called thenardite [thuh-NAR-dyt] and borax. The nitrate of this element is called Chile saltpeter. One of the uses of limestone is to combine this element with carbonate and bi-carbonate in the Solvay process. The common mineral halite ["HAY-light"] is a combination of this element and chloride. Name this element found in rock salt and table salt.

Answer: sodium or Na

Check the score.

16. Just before this leader died, his excommunication was reversed by Pope Pius IX [9]. The original excommunication was retaliation for this person leading troops into the Papal States. One of this leader's daughters became Queen Maria Pia of Portugal, and one of his sons became King Amadeo I of Spain. Another of his sons succeeded him as Umberto I. This leader appointed the Count of Cavour as his prime minister, and he worked with Giuseppe Garibaldi [joo-ZEP-pay gar-ee-BAHL-dee] on unification. Name this king of Sardinia who in 1861 became the king of Italy.

Answer: Victor Emmanuel II [accept Vittorio Emanuele II; prompt on partial answers]

17. The spaker of this poem compares himself to its subject by saying they are both “tameless, and swift, and proud”. The third stanza of this poem claims that the subject causes bodies of water to “grow gray with fear, and tremble and despoil themselves”. The subject of this poem is described as “destroyer and preserver” and the “trumpet of a prophecy”. The end of this poem asks “If Winter comes, can Spring be far behind?”. Name this poem by Percy Shelley that is addressed to “thou breath of Autumn’s being”.

Answer: “Ode to the West Wind”

18. This body of water borders the Autonomous Republic of Adjara [ah-CHAR-ah], whose capital and most populous city is Batumi [bah-TOO-mee]. The western part of this body of water includes the Gulf of Varna, which shares its name with a lake and city on this body’s coast. This body of water is north of the Pontic Mountains and west of the Caucasus Mountains. The Don, Dnieper [NEE-pur], and Danube [DAN-yoob] rivers flow into this body of water. Water from this body goes to the Sea of Marmara through the Bosphorus Strait. This body of water nearly surrounds the Crimean Peninsula. Name this large sea bordered by Turkey, Russia, and Ukraine.

Answer: Black Sea

19. This process, which is not methylation, usually begins near a CpG island. In bacteria, this process can only begin in the presence of a sigma factor protein. The factor named for this process is a molecule that can cause Li–Fraumeni syndrome and Rett syndrome. That molecule named for this process heavily influences RNA polymerases [puh-LIM-ur-“aces”] as either an activator or repressor, and it has DNA-binding domains. Name this process that takes place before translation and which synthesizes messenger RNA from DNA.

Answer: transcription [accept transcribing or transcribe]

20. When this person gained power, he stopped a rebellion led by his former regent Bairam Khan. One of this leader’s wives was Mariam-uz-Zamani, also known as Jodha Bai, who was a Rajput who practiced Hinduism in the royal palace. One attempt by this ruler to unite his empire was the creation of Din-i Ilahi, which combined Hinduism, Islam, Zoroastrianism, and some other religions. This leader’s forces killed Hemu at the Second Battle of Panipat. Name this father of Jahangir [juh-HAHN-gear] and son of Humayun who was the most powerful of the Mughal emperors.

Answer: Akbar the Great [accept Akbar I or Abu’l-Fath Jalal-ud-din Muhammad Akbar]

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. During this war, the Marquis of Caxias [kah-SHEE-ahss] annihilated enemy forces at the Battle of Ayay. Momentum in this war changed when Ignacio Meza was fatally wounded during the Battle of the Riachuelo [ree-ah-CHWAY-loh]. This war ended at the Battle of Cerro Corá with the death of Francisco Solano López. Some of the territory that changed sides at the end of this war is now part of Mato Grosso do Sul [MAH-too GROH-soo doo sool]. Name this war with hundreds of thousands of casualties fought during the 1860s for which Argentina, Brazil, and Uruguay joined forces.

Answer: War of the Triple Alliance [accept Paraguayan War]

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

- ^{TB}22. These structures usually have namesake rakers that are used to retain food and which are more spaced out in carnivores than herbivores. Those rakers project from the arches of these structures, which are sometimes called branchial [BRAN-kee-ul] arches. Like Malpighian [mal-PEEG-ee-un] tubules, these structures have ionocytes that regulate sodium and chloride. These structures process material that enters through the mouth, and the slits of these structures let that material leave the body. Name these organs that extract oxygen from water, allowing underwater animals to breathe.

Answer: gills [accept branchia before branchial arches is said; prompt on branchia after that]

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

- ^{TB}23. A movie named for this number of *Monkeys* starred Bruce Willis and Brad Pitt. A branch of Shi'a Islam is named for this number of imams. There were this many Olympian gods. Give this number of months in a year.

Answer: 12

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.