

# Scobol Solo 2021

## Packet 3 (Round 3)

1. In this novel, a former bricklayer named Kilgas has hidden some roofing-felt, and he gets people to help him use it to cover the windows of the generator room. That action in this novel leads Der to threaten Tyurin, though Der backs down. Characters in this novel have to worry about the mortar freezing when they lay bricks. The protagonist of this novel is often referred to as “Shukhov” [SHOO-kawff] within the book, but not in its title, and has been assigned to Gang 104 after being convicted of being a German spy. Name this novel set in a very cold Soviet gulag, written by Aleksandr Solzhenitsyn.

Answer: *One Day in the Life of Ivan Denisovich* or *A Day in the Life of Ivan Denisovich* or *Odin den Ivana Denisovicha*

2. Two hours into this battle, there was a pause that may be explained by lack of ammunition, the U.S. giving its enemy a chance to surrender, or an opportunity for the fighters to have a second breakfast. The ships *Castilla* [kahss-TEE-ah] and *Reina Cristina* [ray-EE-nah kree-STEE-nah] were destroyed during this battle, which was a loss for Patricio Montojo [mohn-TOH-hoh]. This battle is sometimes named after the Cavite [kah-VEE-tay] naval station. This battle began with the command “You may fire when ready, Gridley.” Name this May 1, 1898 battle that was a major victory for George Dewey, who led the American Asiatic Squadron into the Philippines.

Answer: Battle of Manila Bay [do not accept “Manila”; accept Battle of Cavite before “Cavite”]

3. It is easier for helium-4 to be a super-fluid than it is for helium-3 because the helium-4 nucleus is this type of particle. Super-conductivity has no resistance because electrons exchange phonons [FOH-nahnz] to become Cooper pairs, which behave like this type of particle. The five particles usually shown on the right side of a picture of the Standard Model are this type of particle, including the four gauge examples and the one scalar example. Two or more of these particles can occupy the same quantum state, meaning that they do *not* follow the Pauli exclusion principle. Name these particles that have integer spins, in contrast to fermions [FAIR-mee-ahnz].

Answer: bosons [BOH-zahnz]

4. The subject of this painting appears in another work by the same artist, sitting in a doorway and looking outside. Much of this painting shows grass, with a large light patch close to the barn surrounded by darker grass, including where the person is. The subject of this painting bends her visible arm and leg, and she has dark hair and a pink dress. The face of the person in this painting cannot be seen because she is looking towards the buildings. One of the buildings in this painting is the Olson House in Cushing, Maine. Name this work which shows a woman with a degenerative muscular disorder and which was created by Andrew Wyeth [WY-eth].

Answer: *Christina's World*

5. This person won elections against John Raese [RAY-see] and Patrick Morrisey, and he gained his current position by winning a special election when Robert Byrd died. This person’s daughter Heather Bresch used to be the CEO of Mylan [“MY”-lun], which was heavily criticized for increasing the price of EpiPens. This person is the only senator who voted for the Supreme Court confirmation of Brett Kavanaugh but against that of Amy Coney Barrett. In August 2021, Mitch McConnell said that he prays for the health and judgment of both Kyrsten Sinema [“cinema”] and this other senator. Name this Democratic senator from West Virginia.

Answer: (Joseph) “Joe” Manchin (III)

**Check the score.**

6. A failed attempt to regulate these things was the *Sherley v. Sebelius* case, which dealt with a specific consequence of the Dickey–Wicker Amendment. A compromise policy on these things announced by President George W. Bush in August 2001 forced much of the work on them to be separated based on whether it was privately or publicly funded, and in 2006 Bush vetoed the Research Enhancement Act that would have increased funding on research into these things. Name these things that are taken advantage of in bone marrow transplants and which have been controversial because some of them are taken from embryos.

Answer: (embryonic) stem cells [prompt on embryos or fetuses or fetal tissue]

7. This person’s book *Reflections on the Motive Power of Fire* inspired Rudolf Clausius [“CLAW-see-us”] to develop the concept of entropy and the second law of thermodynamics. A difference in temperatures is divided by the higher temperature to calculate the type of efficiency named for this person. This person proposed a process whose steps are iso-thermal expansion, adiabatic [ay-dee-uh-BAT-ik] expansion, iso-thermal contraction, and adiabatic contraction. Those steps efficiently convert heat into mechanical energy. Identify this French scientist whose namesake cycle is the most efficient cycle possible and is used in his namesake heat engine.

Answer: (Nicolas Léonard) Sadi Carnot

8. In one novel by this writer, a butler tells different versions of his life story, claiming to have been a ship-owner, novelist, and burglar. This author portrayed that butler, Solomon Philbrick, working for Dr. Fagan, who runs the Llanabba [fluh-NAH-buh] School in Wales, where Paul Penny-feather works. Another novel by this writer includes a long description by Cara of her lover Lord March-main, who moved to Italy to be with her and who abandoned Catholicism. In that novel, this author portrayed the friendship of Charles Ryder and Sebastian Flyte. Name this author of *Decline and Fall* and *Brideshead Revisited*.

Answer: (Arthur) Evelyn (St. John) Waugh [EE-vuh-lin waw]

9. The alethic [uh-LETH-ik] form of this belief system is criticized for being self-contradictory. Anthropologist Franz Boas [BOH-az] is credited with developing the cultural form of this belief system along with contextual-ism, which together increased support for the idea of situational ethics and lowered support for the idea of some societies being higher than others. Baruch [buh-ROOK] Spinoza’s argument that one thing can be good, bad, and indifferent is the forerunner of the “moral” form of this belief system. This philosophical viewpoint is often contrasted with monism [MOH-nizm], objectivism, and absolutism. Name this belief that there are no absolute facts because truth depends on the observer.

Answer: relativism [accept relativity or relative]

10. This composer’s *Suite for Variety Orchestra* used to be conflated with the lost music from this composer’s *Suite for Jazz Orchestra No. 2*. Some of the same music is in this composer’s soundtrack for the movie *The First Echelon*. This composer’s fifth symphony references the “Habanera” [ah-bah-nair-ah] from Georges Bizet’s [bee-zay’z] *Carmen*. That symphony is often seen as a reaction to the abrupt shutdown of this composer’s opera *Lady Macbeth of the Mtsensk [mit-SENSK] District*. Name this Soviet composer whose fifth symphony is nicknamed “a Soviet artist’s creative response to justified criticism”.

Answer: Dmitri (Dmitriyevich) Shostakovich [shoh-stuh-KOH-vich]

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

11. A generalization of this theorem guarantees a ratio of derivatives and is named for Augustin-Louis Cauchy [oh-goo-stan loo-ee koh-shee]. A special case of this theorem can be applied to a function that has the same output for two different inputs. This theorem requires a function that is continuous on a closed interval and differentiable on the interior of that interval. A common illustration of this theorem is to show that if a car covered a certain distance in too little time, it must have been speeding. Name this generalization of Rolle’s [“roll’s”] theorem stating that at some point, a function’s derivative matches the slope of a secant line.

Answer: mean value theorem [accept MVT; prompt on Rolle’s theorem before “distance”]

12. This leader and his son were opposed by the Kefaya [kee-FY-uh] Movement, whose name means “Enough”. When that movement was at its peak, this leader arrested his rival Ayman Nour. When this person eventually resigned, he was replaced by the Supreme Council of the Armed Forces and put on trial, and he was found guilty of not halting the killing of protesters. The largest protests against this person were in Tahrir Square in Cairo. Name this person who became the president of Egypt when Anwar Sadat was assassinated and who resigned during the Arab Spring in 2011.

Answer: (Muhammad) Hosni Mubarak

13. A commercial district in the eastern part of this city is called Little Five Points in reference to this city's downtown Five Points District. Much of the northern part of this city between Interstates 75 and 85 is known as Buckhead. This city's Center Parc Stadium is the former location of Turner Field, which in turn was created on the site of this city's Centennial Olympic Stadium. Some of the tourist attractions in this city are the Carter Center, Martin Luther King's childhood home, and the World of Coca-Cola. Name this capital and most populous city of Georgia.

Answer: Atlanta, Georgia

14. Some creatures mentioned in this poem "make their nests under sun-dials" and "live on cheese". The second word in this poem refers to "four o'clock in the afternoon". The primary creature mentioned in this poem is described as having "eyes of flame" after it is said to have "jaws that bite" and "claws that catch". That creature is killed in this poem by a boy with a "vorpal sword". This poem's first stanza states "The slithy toves did gyre [JY-ur] and gimble in the wabe." Name this nonsense poem that is in *Through the Looking Glass* by Lewis Carroll.

Answer: "Jabberwocky"

15. This musician is the subject of the documentary *In His Own Sweet Way*. This person led the quartet that had Ron Crotty on bass and Lloyd Davis on drums when they recorded *Jazz at Oberlin*. By the time this person's quartet recorded the song "Un-square Dance", their lineup included Eugene Wright on bass and Joe Morello on drums. This person's quartet recorded the song "Blue Rondo à la Turk" in 9/8 ["nine eight"] time for the album *Time Out*. Name this musician who played with Paul Desmond on alto saxophone when they recorded "Take Five".

Answer: (David Warren) "Dave" Brubeck [BROO-bek]

### **Check the score.**

16. Some of the research on this body part is done on the genus *Dictyostelium* [dik-tee-oh-STELL-ee-um] because it reacts to small amounts of cyclic AMP [spell it]. One way to classify Rhizaria ["rye"-ZAR-ee-uh] is based on whether they have the filose [FY-lohss], reticulose [reh-TIK-yoo-lohss], or narrow types of this body part. This part of an organism can surround bacteria, algae, or fungal cells before they get digested in a type of phago-cytosis [FAY-goh-"site"-OH-siss]. Organisms create this body part and then move toward it. Flagella [fluh-JELL-uh], cilia [SILL-ee-uh], and these parts are the primary movers of single-celled organisms. Name these projections, often used by amoebas, whose name means "false foot".

Answer: pseudopods or pseudopodia [or pseudopodium; accept lamellipods or lamellipodium or lamellipodia]

17. One of these creatures allegedly was crushed when a god threw what is now the island of Nisyros [NEE-suh-rohss] at him. According to Apollodorus [ah-pah-LOH-doh-russ], two of these creatures were killed by the Moirai [MOY-ry] with bronze clubs. One king of these creatures, who died when Heracles dragged him from his homeland, was Alcyoneus [al-“SIGH”-uh-nooss]. Another king of these creatures, whom Zeus caused to fall in love with Hera, was Porphyryon [por-“FEAR”-ee-ahn]. A generation after the Titans and around the same time as the Furies, these creatures were created when the blood of Uranus impregnated Gaia [“GUY-uh”]. Name these creatures who were sometimes conflated with Titans because they fought a similar war against the gods.

Answer: Giants or Gigantes [accept answers that additionally specify Greek mythology]

18. The death of one of these animals is investigated by Eddie Valiant in a novel by Gary K. Wolf. In that novel, that animal and his wife Jessica have last names that are the name of this animal. In a folk story, one of these animals convinces a fox to throw him where this animal was born and bred. In that story, which was in a collection by Joel Chandler Harris, this animal is trapped by the fox with a tar baby, and the fox throws him in the briar patch. Name these animals that are also the subject of books written by Margery Williams, Richard Adams, and Beatrix Potter.

Answer: rabbits [prompt on bunny/ies]

19. British Colonial Secretary Joseph Chamberlain proposed a compromise to supporters of this movement, called the British Uganda Program. The goals of this movement were stated in the Basel [BAH-sul] Program, which was ratified in 1897. In 1917, the Balfour Declaration supported this movement. This movement was started by Theodor Herzl [TAY-oh-dor HAIRT-sull] and taken over by Chaim Weizmann [HY-eem VYTS-mun] after Herzl’s death. This movement gained popularity after the Dreyfus affair and a series of pogroms [puh-GROMZ], and its main goal was achieved after the Holocaust, in 1948. Name this movement to create a Jewish state.

Answer: Zionism or Zionist movement [prompt on answers mentioning Israel or that are similar to the last sentence]

20. Before mass spectrometry is used on acrylics, the pyrolysis [py-RAH-luh-siss] gas type of this process is used. Though distillation and absorption were the first processes to use the concept of the height-equivalent theoretical plate, that quantity has been adapted for this process using the van Deemter [DEEM-tur] equation. A graph commonly used to depict this process, on which the  $x$ -axis represents retention time, can be created based on when substances convert from the mobile phase to the stationary phase. Name this process that is used to separate a mixture, often a pigment.

Answer: chromatography [kroh-muh-TAH-gruh-fee]

***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. Four stags feed on this object, and Ratatosk [RAH-tuh-tawsk] runs up and down this object to convey messages. The name of this object combines the words for “terrible” and “horse”; “horse” is a reference to hanging gallows, and “terrible” is an epithet for a god who hanged himself from this object. The gods meet daily by this object, and the Nine Worlds surround it. This object shivers at the beginning of Ragnarök. Name this object that, according to both Eddas, is an immense ash tree.

Answer: Yggdrasil [prompt on ash tree or sacred tree or world tree]

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

- <sup>TB</sup>22. For this state of matter, the bulk modulus is a useful measure, but Young’s modulus is not because of this state of matter’s relationship between stress and deformation. The colligative properties generally apply to this state of matter or the two types of phase changes involving this state of matter. This state of matter both retains its volume and conforms to the shape of its container. The only two elements that are this state of matter at standard temperature and pressure are bromine [BROH-meen] and mercury. Name this state of matter that is the outcome of the condensation of a gas or the melting of a solid.

Answer: liquid [prompt on fluid]

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

- <sup>TB</sup>23. This letter represents an electric field equal to the electric dipole moment times the regular electric field plus the polarization density. This letter is the Roman numeral that represents five hundred. This letter represents June 6, 1944. At the end of an integral, this letter precedes the name of the variable that the integration is done with respect to. In most American schools, this letter represents the lowest passing grade. Name this letter that comes between ‘C’ and ‘E’.

Answer: d

***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.***