Scobol Solo 2021

Packet 2 (Round 2)

1. This person tried to model the solar system based on the six known planets being separated by the five Platonic solids. This person tried to make connections between planetary motion and musical intervals, which explains why one of his laws is known as the Harmonic Law. This person determined that a segment connecting the Sun to a planet sweeps out equal areas during equal time intervals. Based on observations by Tycho Brahe [BRAH-hee], this person also determined that planets' orbits are ellipses. Name this German astronomer who determined three laws of planetary motion.

   Answer: Johannes Kepler

2. This state's capital contains the Clay Center for the Arts and Sciences and is at the confluence of the Kanawha [kuh-NAW] and Elk rivers. This state's highest point, Spruce Knob, is in the Monongahela [muh-NAWN-guh-HEE-luh] National Forest. The eastern·most point in this state is at the confluence of the Potomac and Shenandoah rivers at the town of Harpers Ferry. This state's second most populous city, Huntington, is at its west end, near Ohio and Kentucky. Name this state whose capital is Charleston.

   Answer: West Virginia [do not accept or prompt on "Virginia"]

3. The first known pandemic of this disease started in 1817 in India and was particularly deadly on the island of Java. A second pandemic of this disease started in India in 1829, and by 1832, it had killed a thousand people in Quebec. After finding the causes of anthrax and tuberculosis, Robert Koch ["coke"] discovered the cause of this disease. The United Nations was criticized for a 2010 outbreak of this disease following an earthquake in Haiti, and thousands of deaths due to this disease have been blamed on the recent civil war in Yemen. Name this bacterial disease that is often spread by contaminated water.

   Answer: cholera

4. Tobias Haslinger called this composer's *Piano Sonata No. 3* the "concerto without orchestra". This composer's work can be heard when Toto escapes from Miss Gulch in *The Wizard of Oz*. That song is taken from this composer's *Album for the Young*, and its title is translated as "The Merry Peasant" or "The Happy Farmer". This composer also wrote an eight-movement piano piece in 1838 that was dedicated to Frédéric Chopin instead of this composer's fiancée to prevent antagonizing her father, who disapproved of the marriage. Name this composer of *Kreisleriana* [kryss-lair-ee-AH-nah] who married his piano teacher's daughter Clara.

   Answer: Robert Schumann

5. Gus requests to be buried in this U.S. state in a novel whose characters travel from this state to Montana and back. That novel about Captain Woodrow F. Call was written by Larry McMurtry, who was from this state. Ed Tom Bell is the sheriff of this state's Terrell County in a different novel that depicts the aftermath of Llewelyn Moss stumbling upon a drug deal that has gone bad. A legendary character from this state was married to Slue-Foot Sue and shot all the stars from the sky except the one on this state's flag. This state is the setting of *Lonesome Dove* and Cormac McCarthy's *No Country for Old Men.* Name this home of Pecos Bill, who made the Rio Grande River.

   Answer: Texas

Check the score.

6. The Tait–Kneser theorem applies to a type of this shape, so the osculating circles of that type of this shape are disjoint and nested within each other. Another type of this shape can be generated using the vertices in a Fibonacci tiling. Though this shape is usually curved, the version named for Theodorus [thee-oh-DOR-uss] is a sequence of segments, each of which is a leg of a right triangle. There are also "Archimedean" [ark-ih-MEE-dee-un] and "golden" examples of this type of shape, and the Archimedean type is generated by the polar equation $r = \theta$ ["r equals theta"]. Name this shape generated by a point moving farther and farther from a center as it rotates.

   Answer: spirals

7. According to Hesiod's [HESS-ee-ud'z] *Works and Days*, this person was given lies and crafty words by Hermes. Near the end of his story about this person, Hesiod [HESS-ee-ud] says "Only Hope remained there." Epimetheus [ep-ih-MEE-thee-uss] accepted this person as a gift despite warnings from his brother Prometheus [proh-MEE-thee-uss] to never accept gifts from Zeus. The object associated with this person was called *pithos* in Greek, a word which usually is translated as "jar", though it is often translated as a different type of container in the context of this person. Name this first human woman in Greek mythology, who let evil into the world when she opened her box.

   Answer: Pandora [accept Anesidora]

8. Victory in this battle was achieved by a feigned retreat according to accounts written by William of Malmesbury and William of Poitiers [pwaht-yay]. This battle took place about three weeks after the Battle of Stamford Bridge, where Harald Hardrada was defeated. This battle, which was fought between two people who each believed they should have been the successors of Edward the Confessor, is depicted on the Bayeux [by-oo] Tapestry. Name this part of the Norman invasion in which William the Conqueror defeated Harold Godwinson in 1066.

   Answer: Battle of Hastings

9. In addition to running a general store, Mr. Wopsle's great aunt belongs to this profession, but she spends most of her work time sleeping while Mr. Wopsle acts out Shakespeare's plays. In another novel, several members of this profession use the Gradgrind system that emphasizes facts over everything else. In addition to those characters from *Great Expectations* and *Hard Times*, several members of this profession work at Lowood. Name this profession practiced by Madame Pierrot [pee-uh-roe] and Miss Miller, who work with Jane Eyre both before and after she graduates.

   Answer: teachers or teaching or tutors or tutoring [or schoolmasters; accept education]

10. Hydrogen is added to this compound to make a precursor of capro·lactam, which is polymerized [puh-LIM-ur-"eye"zd] to make nylon. Exposure to this compound can be measured by looking for trans,trans-muconic acid in urine, and that exposure usually comes from tobacco smoke and increases the risk for anemia and leukemia. Changing a hydrogen atom in this molecule to a hydroxyl group turns it into phenol [FEE-nol], and changing a hydrogen atom to a methyl group turns it into toluene [TAHL-yoo-een]. This compound and its derivatives were the first ones described as aromatic. Name this compound whose molecular formula is C_6H_6 ["C 6 H 6"].

   Answer: benzene [prompt on C_6H_6 before the end]

Check the score.

11. After being associated with a school of art named for a river, Thomas Moran and Albert Bierstadt traveled to the western U.S. and became associated with a school of art named for this type of geographical feature. A series of prints depicting *36 Views of* one of these features was made by Hokusai, and the most famous painting from that series shows one of these features in the background of *The Great Wave off Kanagawa*. A Jacques-Louis David [zhahk loo-ee dah-veed] painting shows Napoleon on a white horse crossing this type of geographical feature. Name this feature that can be seen in *Napoleon Crossing the Alps*.

    Answer: mountains [accept mountain ranges; accept Rocky Mountains before "Hokusai"]

12. Shirley Temple Black was in this capital city to represent the International Federation of Multiple Sclerosis Societies, but her meeting with the leader of this city's country was canceled when tanks entered. Those tanks ended a period in this city that supported the slogan "Socialism with a human face" and was led by Alexander Dubček [DOOP-chek]. In 1419, 1483, and 1618, town councilors or Catholic regents were thrown out of windows in this city, the last instance of which sparked the Thirty Years' War. Name this city in which those historically important defenestrations took place and which is now the capital of Czechia ["CHECK-ee-uh"].

    Answer: Prague [or Praha; accept answers that additionally mention the Holy Roman Empire, HRE, Bohemia, Czechoslovakia, Czech Republic, or Czechia]

13. This writer differentiated between propositions whose predicate is contained in the subject and propositions where that is not true, which became known as the analytic-synthetic distinction. This person's table of judgments was criticized in an essay by Arthur Schopenhauer [SHOH-pen-how-ur] that also praised this writer for using the concept of "thing-in-itself". In *Groundwork of the Metaphysic of Morals*, this person wrote "I ought never to act except in such a way that I could also will that my maxim should become a universal law", which is known as his categorical imperative. Name this German philosopher who wrote *Critique of Practical Reason* and *Critique of Pure Reason*.

Answer: Immanuel Kant

14. One poem by this writer begins "Thou ill-formed offspring of my feeble brain". Those lines are believed to refer to the publication of this poet's works by her brother-in-law, Reverend John Woodbridge, without her permission. This writer of "The Author to Her Book" ended another work with the lines "The world no longer let me love / My hope and treasure lies above." That poem begins with this poet being awakened by a "thundering noise". Name this poet who wrote "Verses upon the Burning of our House, July 10th, 1666" and whose brother-in-law published her poems in *The Tenth Muse Lately Sprung Up in America*.

Answer: Anne (Dudley) Bradstreet [accept either underlined name]

15. Henry Kater built a version of this type of device that could be turned upside down and was used to measure gravitational fields. Christiaan Huygens ["HI"-gunz] tried to build one of these objects that moved in the path of a cycloid because cycloids solve the tauto·chrone [TAWT-oh-krohn] problem, but his efforts failed due to friction. When studying the most common type of these objects, the small-angle approximation is often used, leading to the conclusion that the period does not depend on the displacement from equilibrium. In 1851, the rotation of the Earth was demonstrated by two of these devices that were put in the Paris Observatory and Paris Panthéon by Léon Foucault [lay-aw foo-koh]. Name these swinging objects that were used in grandfather clocks.

Answer: pendulums

Check the score.

16. This historic building is next to a museum holding the Spoonmaker's Diamond. That museum is the Topkapi Palace. According to legend, this building's Emperor Door was made from wood from Noah's Ark. This building is not in Greece, but it was designed by Isidore of Miletus ["my"-LEE-tuss] and Anthemius of Tralles [TRAL-eez]. In 2020, there was a political attempt to change this building from a museum back into a mosque. When this building became a museum in 1932, there was an effort to restore its mosaics after centuries of opposition by iconoclasts. Name this building constructed on orders by Justinian I in the sixth century in what is now Istanbul.

Answer: Hagia Sophia ["eye"-uh soh-FEE-uh] (Holy Grand Mosque) [or Ayasofya(-i Kebir Cami-i Serifi)]

17. Secretary of Agriculture and Vice President Henry Wallace credited this person for Wallace's interest in plants based on walks they took when Wallace was a kid in Ames, Iowa. This person's childhood home near Diamond, Missouri is now a national monument. This person was credited with moving Southern agriculture from cotton towards sweet potatoes, soybeans, and other crops that this person published recipes for. When Booker Washington started an Agriculture Department at the Tuskegee [tuss-KEEG-ee] Institute, he put this person in charge of it. Name this scientist who published many bulletins, including one with 105 recipes using peanuts.

Answer: George Washington Carver

18. This country's states Kaduna and Zamfara have had hostage situations in 2021 caused by nomadic cattle herders who belong to the Fulani ethnic group, and its states Borno and Adamawa [ad-uh-MAH-wuh] have been hit by an Islamist insurgency. This country is the biggest oil producer in Africa, and it has the largest population in Africa. This country's president, who won elections over Atiku Abubakar [uh-TEE-koo ah-BOO-buh-kar] and Good·luck Jonathan, is Muhammadu Buhari. Name this country that in 1991 moved its capital from Lagos to Abuja.

Answer: (Federal Republic of) Nigeria

19. This classification is the most general set of organisms that have 40S ["forty S"] and 60S sub·units that combine to form 80S ribosomes ["RYE"-boh-sohmz]. These organisms have three types of RNA polymerase [puh-LIM-ur-"ace"] instead of one, and in these organisms there is a distinction between precursor and mature messenger RNA. This is the most general set of organisms with linear DNA that is in cell nuclei. These organisms are the most complex domain in Carl Woese's ["woes"'z] three-domain system. Fungi, plants, and animals are all this type of organism. Name these organisms whose cells have a bound nucleus, in contrast to pro·karyotes ["pro-CARRY-oats"].

Answer: eukaryotes ["YOU-carry-oats"] [or Eukaryota or Eukarya]

20. In one novel by this writer, the protagonist is supposed to learn Latin from a priest who is much more interested in astrology than Latin. That teacher, Father Blanès [BLAH-nes], is respected by this author's protagonist's aunt, Countess Pietranera [pee-eh-trah-"NEAR"-uh]. In another novel by this author, the protagonist is taught Latin by Abbé Chélan [ab-ay shuh-lon] and is sent to a seminary in Besançon [bez-ahn-sawn] after having an affair with Madame de Renal. The title of that novel contrasts clerical and secular interests by using colors. Name this French author of *The Charterhouse of Parma* and *The Red and the Black*.

Answer: Stendhal [or Marie-Henri Beyle]

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.

TB21. The frequencies of these things can be modeled by the M8 and F3x4 ["F three by four"] models. The adaptability of viruses can to some extent be predicted by measuring the bias in the usage of these things, which can be analyzed using the "Adaptation Index" named for them. Tables listing these things are sometimes round and sometimes rectangular with more rows on the right side than on the left. In eukaryotes ["you-CARRY-oats"], methionine [muh-"THIGH"-uh-neen] is specified by the "start" example of these things, AUG [spell it], while the "stop" ones indicate that translation should end. Name this unit of genetic code in DNA or RNA that is a sequence of three nucleotides.

Answer: codons

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

TB22. This type of poetry was the subject of six books by Reginald Horace Blyth, who also organized a four-volume collection of these poems. Jack Kerouac ["CARE"-oh-ak] wrote poems in this form, saying they "must be very simple and free of all poetic trickery". Ezra Pound's "In a Station of the Metro" is based on this type of poem. Prose and this type of poem are combined in the book *The Narrow Road to the Deep North*. A famous example of this type of poetry is about a frog jumping into a pond. Name this type of poetry written by Matsuo Basho in Japanese that is often constrained to three lines of five, seven, and five syllables.

Answer: haiku(s) [accept hokku]

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

TB23. This letter is not 'P', but it represents the type of semiconductor doping that is done with phosphorus. Statistics formulas use this letter to represent the size of a sample. The lowercase version of this letter is used to abbreviate the metric prefix for 1 billionth, which is 10^{-9} ["10 to the negative-9th power"], and the uppercase version of this letter is the abbreviation for the SI [spell out] unit of force. This letter is the atomic symbol for nitrogen. Name this letter that comes between 'M' and 'O'.

Answer: n

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.