# Scobol Solo 2016
## Packet 12 (Round 12)

1. This adjective is used with the word "bond" in the name of a theory that, with molecular orbital theory, laid the foundations for understanding the quantum nature of bonds. This word describes an energy band found below the Fermi level which is contrasted with the conduction band. This word is not "order" but can describe the number of bonds an atom is able to form. Bonds between elements with similar electro·negativities are named for the fact that they share electrons described by this word. Give this word that describes electrons that can form bonds, because they are in the outermost shell of an atom.

   Answer: valence or valency [prompt on covalent bond or covalence or covalency]

2. Giuseppe Fiorelli studied the impact of this event over a thousand years after it happened. One of the people who studied the impact of this event was Karl Weber [VAY-bur], who studied the Villa of the Papyri, which is recreated at the Getty Museum. Pliny the Younger wrote two letters to Tacitus about this event, which killed his uncle, Pliny the Elder. The House of the Faun was destroyed during this event after having already been damaged in an earthquake in AD 62. Over a thousand people near the Gulf of Naples were killed during this event. Name this event in AD 79 that destroyed Stabiae [STAH-bee-ay], Herculaneum [herk-yoo-LAY-nee-um], and Pompeii [pahm-PAY].

   Answer: eruption of Mount Vesuvius [accept alternate phrasing containing both underlined portions; accept the destruction of Pompeii or similar answers before "Pompeii"; prompt on answers referring to volcanic eruptions]

3. In this musical, a song that starts with a Persian man yelling "Trapped Tricked Hoodwinked Ambushed!" is called "It's a Scandal! It's a Outrage!", and is sung by Ali Hakim. One song in this musical states that the title place is "where the wind comes sweepin' down the plain". The first special Pulitzer Prize was given to Rodgers and Hammerstein for this musical. Near the end of this musical, Jud Fry kisses Laurey Williams and attacks her new husband Curly McLain. Name this musical featuring the songs "People Will Say We're in Love" and "Oh, What a Beautiful Mornin'', in which the title territory is about to become a U.S. state.

   Answer: *Oklahoma!*

4. Malaysian Prime Minister Najib Razak threatened to sue this newspaper after it claimed $700 million was transferred to his personal account. This newspaper's "What They Know" series focused on information collected by web trackers. Paul Gigot [jee-GOH] edits this paper's editorial page, and its columnists include the former President Reagan speechwriter Peggy Noonan and the author of *America in Retreat*, Bret Stephens. This newspaper conducts polls cooperatively with NBC. In 2007, News Corp acquired this newspaper by purchasing its original owner, Dow Jones. Identify this newspaper that is named for the New York City financial industry.

Answer: *The Wall Street Journal* [accept *WSJ*]

5. A septal defect causes this structure to be "overriding" in one of the conditions that characterize the tetralogy of Fallot [fah-loh]. This structure is unusually narrow in Turner syndrome, while sufferers of Marfan syndrome may have it widen to the point where it can easily rupture. Like the entrance to the pulmonary arteries, this structure's entrance contains a semi·lunar valve in the left ventricle. The lower portion of this structure branches off into the iliac [IL-ee-ak] arteries, while its arch branches into the left carotid [kuh-RAH-tid] and subclavian ["sub-CLAY"-vee-un] arteries. Name this largest artery of the body.
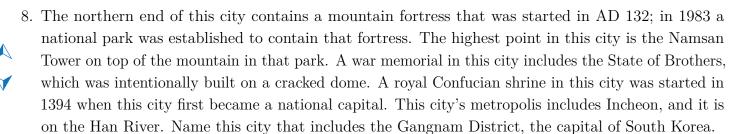
Answer: aorta

***Check the score.***

6. This author's trio of mystery novels set in Venice, California ends with *Let's All Kill Constance*. In another novel by this author, Leo Auffmann tries to build a Happiness Machine, and Mr. Sanderson sells Cream-Sponge Para Litefoot Shoes to Douglas Spaulding in Green Town, Illinois. In another of his novels, the protagonist meets his new neighbor, Clarisse McClellan, before finding out that his wife Mildred took too many sleeping pills. In that novel, this writer described an eight-legged "Mechanical Hound" and firemen who burn books. Name this science fiction author who wrote *Dandelion Wine* and *Fahrenheit 451*.

Answer: Ray(aymond Douglas) Bradbury

7. A failed rebellion in this country led by Jean-Baptiste Chavannes [zhahn bahp-teest shah-vahn] and Vincent Ogé [oh-zhay] was put down by executing them. A few months later in this country, Dutty Boukman led a religious ceremony predicting the end of slavery that started a successful revolution, which led to Jean-Jacques Dessalines [zhahn zhahk day-sah-leen] becoming this country's emperor for two years and a massacre of much of its white population. This country was known as Saint-Domingue [san doh-mang] before it gained independence from France. This country's revolution was led by Toussaint Louverture. Name this French-speaking country on Hispaniola.

Answer: (Republic of) Haiti [or (République d')Haïti]

8. The northern end of this city contains a mountain fortress that was started in AD 132; in 1983 a national park was established to contain that fortress. The highest point in this city is the Namsan Tower on top of the mountain in that park. A war memorial in this city includes the State of Brothers, which was intentionally built on a cracked dome. A royal Confucian shrine in this city was started in 1394 when this city first became a national capital. This city's metropolis includes Incheon, and it is on the Han River. Name this city that includes the Gangnam District, the capital of South Korea.

Answer: <u>Seoul</u>, South Korea

9. One painting by this artist was inspired by a box of pencils with a picture of the *Venus de Milo*, and is filled with flies and colored dots; the upper left of that painting shows the face of this painter's wife, Gala. This artist used the shadows of several *Veneres de Milo* to portray a bullfighter in *The Hallucinogenic Toreador*. In the lower left corner of another painting, this artist showed an orange clock covered with ants; that painting is set on the coast of Catalonia, and also includes a tree with one long branch that has a melting clock hanging over it. Name this Spanish surrealist painter of *The Persistence of Memory*.

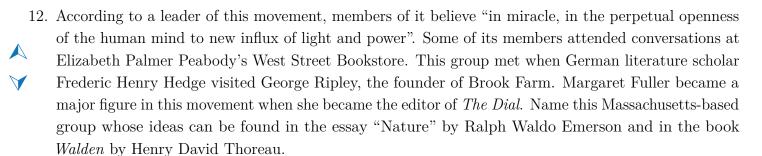Answer: Salvador (Domingo Felipe Jacinto) <u>Dalí</u> (i Domènech)

10. In this book, a character asks what use thorns have, since sheep eat everything they find, including flowers with thorns. In this book, that character brags that he saw the sunset 44 times in one day. The narrator of this book advises waiting under a star if you find the landscape he draws, because he wants the reader to meet the same small man that he met. Earlier in this book, that small man is disappointed because grown-ups think that his picture of a boa digesting an elephant looks like a hat. Name this story about the resident of Asteroid B-612, originally written in French by Antoine de Saint-Exupéry [an-twan day sen eg-zoo-pair-ee].

Answer: *The <u>Little Prince</u>* [or *Le <u>Petit Prince</u>*]

*Check the score.*

11. When *reading* from a bit field, this operation is used between the field and a mask. Many programming languages allow this operation to "short-circuit" if its first input is `false`. If 0 and 1 represent `false` and `true`, respectively, this operation is equivalent to multiplication. The logic gate corresponding to this operator looks like a gumdrop. In C and languages derived from C, this operation is slightly *higher* in precedence than the `or` operator. Name this operation that returns `true` only when *both* of its inputs are `true`.

Answer: (logical or bitwise) <u>and</u> [or <u>conjunction</u>]

12. According to a leader of this movement, members of it believe "in miracle, in the perpetual openness of the human mind to new influx of light and power". Some of its members attended conversations at Elizabeth Palmer Peabody's West Street Bookstore. This group met when German literature scholar Frederic Henry Hedge visited George Ripley, the founder of Brook Farm. Margaret Fuller became a major figure in this movement when she became the editor of *The Dial*. Name this Massachusetts-based group whose ideas can be found in the essay "Nature" by Ralph Waldo Emerson and in the book *Walden* by Henry David Thoreau.

Answer: transcendentalism or transcendentalists

13. One member of this family drafted a bill to create an Electoral Commission to settle the Election of 1876 when he was serving as Ulysses Grant's attorney general. Another member of this family, who was briefly the Senate Majority Leader before he died in 1953, was an isolationist from Ohio nicknamed "Mr. Republican". Another member of this family was Teddy Roosevelt's Secretary of War, and succeeded Roosevelt as President before Roosevelt started the Bull Moose Party to oppose his re-election bid. Name this family that includes the only person to serve as both President and Chief Justice.

Answer: Taft family or Tafts [accept Alphonso Taft or Robert Taft or William Howard Taft]

14. This writer concluded that "God becomes as we are, that we may be as he is" at the end of his poem "There is no natural religion". In one introductory poem, this person wrote "and I wrote my happy songs / every child may joy to hear", while in another he asks "Why wilt thou turn away?". One of this writer's poems tells an animal "God bless thee" after asking that animal "Who made thee?", and is often paired with a poem that asks a different animal "what immortal hand or eye / dare frame thy fearful symmetry [SIM-ih-try]?". Name this English writer whose poems "The Lamb" and "The Tiger" are collected in *Songs of Innocence and of Experience*.

Answer: William Blake

15. In an electrical circuit with an inductor, the ratio of inductance to resistance is called a "constant" named for this quantity. This quantity is multiplied by the speed of light to label one of the axes on a graph that portrays the impacts of special relativity, the Minkowski [meen-KAWFF-skee] diagram. The integral of force with respect to this quantity equals the change in momentum, and is called impulse. Entropy is sometimes called the "arrow of" this quantity. Work divided by this quantity equals power. Name this quantity found in the denominator of the definition of average velocity.

Answer: time

***Check the score.***

16. A part of Dvořák's [d'VOR-zhahk's] symphony with this number had lyrics added to it by William Arms Fisher, one of his students, and is called "Goin' Home". Beethoven's symphony in this number, written in D minor, has a theme of 12 quarter notes followed by a dotted quarter note, eighth note, and half note, set to the tune of Friedrich Schiller's "Ode to Joy". Legend has it that Gustav Mahler did not number his *Das Lied [leed] von der Erde* because of a curse that afflicted writers of this number of symphonies. Give this number used for Dvorák's "From the New World" and Beethoven's "Choral" symphonies.

Answer: symphony/ies number <u>nine</u> or <u>ninth</u> symphony/ies

17. This country was unified shortly after Kassa Hailu won the Battle of De·ras·ge in 1855, and it kicked out European troops at the Battle of Dogali in 1887. After the Ab·o·le oil field raid in this country killed 74 people in 2007, this country cracked down against the Ogaden National Liberation Front. Just before the March of the Iron Will against this country in 1936, a speech to the League of Nations was given by this country's emperor. This country became landlocked after the Eritrean War of Independence. Name this country that was led by Haile ["highly"] Selassie and has recently supported Kenya in fights in neighboring Somalia.

Answer: (Federal Democratic Republic of) <u>Ethiopia</u> [or <u>Ityop'iya</u> (Federalawi Demokrasiyawi Ripeblik); accept <u>Abyssinia</u>]

18. When this girl is asked about marriage, she says "It is an honour that I dream not of." When a boy tells this girl "Give me my sin again", she responds, "You kiss by the book." This character is placed in a crypt after she takes a potion that puts her into a coma for 42 hours. She tells the boy she loves "Parting is such sweet sorrow." After she decides that she is not interested in Paris, her cousin Tybalt tries to kill the boy who falls in love with her. Name this Shakespeare character who belongs to the Capulet family and asks, "Wherefore art thou Romeo?".

Answer: <u>Juliet</u> Capulet [do not accept or prompt on "Capulet"]

19. This deity is the subject of the longest Homeric hymn, and he fathered a son who was attacked by the nymph Salmacis [sal-muh-KISS]. Conflation with the Egyptian deity Thoth led to a syncretic "thrice-greatest" form of this deity being worshipped at Khmun [k'-MOON]. This deity was born in a cave on Mount Cyllene [SIL-ih-nee] to a member of the Pleiades [PLEE-uh-deez] named Maia. After stealing Apollo's cattle, this deity appeased him by crafting the first lyre from a tortoise shell. The rod of Asclepius [ass-KLEE-pee-uss] is commonly conflated with this deity's serpent-entwined caduceus [kuh-DOO-shuss]. Name this Greek messenger god, who is typically depicted with a winged helmet and sandals.

Answer: <u>Hermes</u>

20. If two sets are disjoint, the cardinality of their union is found by applying this operation to their individual cardinalities. When the cosine function is applied after this operation is applied to $a$ and $b$, the result equals $\cos a \cos b - \sin a \sin b$ ["cosine $a$ cosine $b$, minus sine $a$ sine $b$"]. Performing this operation on consecutive odd numbers starting with 1 gives perfect squares. Performing this operation on two log functions is equivalent to multiplying the inputs before taking the log. This operation is performed on vectors by drawing them tip to tail. Name this operation that can be cancelled out by subtracting.

Answer: addition or adding or summation [accept summing; accept plus]

*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. A 2010 experiment led by Randolf Pohl found that these particles get smaller in the presence of muons [MYOO-ahnz]. The oldest major particle accelerator at CERN [surn] is named for these particles, and a category that these particles belong to names CERN's most powerful accelerator, which primarily runs experiments on these particles. These particles consist of two up quarks and one down quark, and are a primary component of cosmic rays. One of these particles is converted into a positron and an electron neutrino during beta-plus decay. Name these positively-charged particles that are, along with neutrons, in the nucleus.

Answer: protons

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

TB22. In this state, Saline Valley is separated from Owens Valley by the Inyo Mountains. Some of the southern part of this state is taken up by the Anza-Borrego Desert State Park, which is west of the Salton Sea. Its Bitter Creek National Wildlife Refuge was started during the 1980s when the type of condor named for this state almost became extinct. This state has several national parks named for trees, including Redwood, Sequoia, and Joshua Tree. It also contains the largest national park in the contiguous United States, Death Valley. Name this state whose major cities include Chula Vista, Bakersfield, Fresno, and San Diego.

Answer: California

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

TB23. The title of one of Frank McCourt's autobiographies made clear that he belonged to this profession. The way Jaime Escalante ["HIGH"-may ess-kah-LAHN-tay] did this job was the subject of the movie *Stand and Deliver*. The way John Scopes did this job was the subject of his famous Monkey Trial. Name this job performed in primary and secondary schools.

Answer: teacher [accept more specific answers]

*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.*