

# Scobol Solo 2016

## Championship I (Phase I: Questions 1-20)



1. An operetta by this European composer became so popular that five theaters in Buenos Aires performed it simultaneously. The title of one of his operettas pokes fun of Chinese culture, calling China *The Land of Smiles*. This composer's most popular operetta is set in a fictionalized version of Montenegro called Pontevedro [pohn-tay-VAYD-roh], in which the locals believe in fairies called vilja [VEEL-yuh]; that operetta includes a waltz that this composer extended into "Sirens of the Ball". That operetta by this composer is about Hanna Glawari, who has a lot of money after her husband's death and loves Count Danilo Da-ni-lo-vitsch. Name this 20th-century Austro-Hungarian composer who wrote *The Merry Widow*.

Answer: Franz Lehár

2. A set of seven recommendations from this series of meetings ended with presidents not being able to run for re-election and consecutive presidents not being from the same state. The first of those recommendations from these meetings called for slaves not to be counted in Congressional apportionment. These meetings followed Massachusetts Governor Caleb Strong's refusal to put the state militia under federal military control. These meetings were criticized for being held in secret, and included many attendees who were critical of James Madison. Name these meetings that discredited the Federalist Party near the end of the War of 1812.

Answer: Hartford Convention

3. This phenomenon causes the initial motion across a valley in shifting balance theory. This phenomenon is the primary source of change in systems with a Tajima's  $D$  of zero, as it is the principal source of changes according to Kimura's neutral theory. This phenomenon is modeled as a binomial distribution in the Fischer-Wright model. This phenomenon is more pronounced in smaller populations, such as when a population is bottlenecked, or the special case of the founder effect. Name this phenomenon in which a population's allele frequency changes due to random sampling.

Answer: genetic drift(ing)

4. This author wrote about Francisco, who impregnates Fanny but is murdered by her. In that novel, this author shows pieces of the life of Juan Carlos Etchepare [ayt-chay-PAR-ay] after he dies from tuberculosis. This author wrote about José Casals, a boy known as “Toto” who is obsessed with movies. In another novel by this author, one character describes a movie about a woman who turns into a panther at night. The person who hears the description is an imprisoned Marxist named Valentin Arregui Paz, and the speaker is the homosexual Luis Molina. This author’s first books are *Heartbreak Tango* and *Betrayed by Rita Hayworth*. Name this Argentine author of *Kiss of the Spider Woman*.

Answer: (Juan) Manuel Puig (Delledonne)

5. The “circle” named for this person included his collaborators Alexei Le-on-tiev and Alexander Luria, the latter of whom worked with him on *Ape, Primitive Man, and Child*. This person’s belief that a social environment led to improvements in thought and behavior led to the development of cultural-historical psychology. Much of this person’s popularity came from a posthumously published book describing the differences between inner speech and language, whose title translates as either *Thinking and Speech* or *Thought and Language*. Name this Russian psychologist who described the difference between what a person can do alone [pause] and what a person can do with help [pause] as the “zone of proximal development”.

Answer: Lev (Semyonovich) Vy·got·sky

### **Check the score.**

6. This is the most famous person to have worked under Eduard Wirths [veerts], with his fame due in part to writings by Miklós Nyiszli [MEEK-losh “NIECE”-lee]. This person’s fascination with twins developed while he was a student of Otmar von Verschuer [“OAT”-mar “fawn” VAIR-shoo-ur]. He tried to use chemicals to change people’s eye colors. This person traveled using the name Helmut Gregor, and he was originally buried as Wolfgang Gerhard [VULF-gahng GAIR-hart]. Many accounts of this person described him deciding who was healthy enough to work. Much of his work was on children labeled as gypsies, and at least once he tried to turn two of them into conjoined twins. Name this doctor who was nicknamed “the Angel of Death” for his work at Auschwitz [“OW”-shvits].

Answer: Josef Mengele [YOH-zef “MAIN”-guh-luh]

7. Miriam Mahdav·i·ani used this composer’s music in her ballet *Correlazione* [KOR-“ail”-aht-see-OH-nay]. Michael Tippett composed a *Fantasia Concertante* based on a theme by this composer. Francesco Gemin·i·ani’s reworkings of some of the music by this composer contributed to this man being called the “father of the *concerto grosso*”. This composer developed Jean-Baptiste Lully’s “La Folia”, which over 200 years later was turned into a set of variations by Sergei Rachmaninoff. His opus six, published posthumously, included his Christmas Concerto. Name this Italian composer who influenced Vivaldi and was considered a great violinist.

Answer: Arcangelo Corelli

8. Quantum radar uses this phenomenon to detect stealth planes, because this phenomenon lets the system detect which photons came from the radar and which photons were spoofed. Quantum radar has a limited range because the impacts of this process decay with environmental interaction through quantum de-coherence. John Stewart Bell wrote about the spin of electrons that exhibited this property when developing his namesake theorem in the paper “On the Einstein-Podolsky-Rosen Paradox”. Albert Einstein described this phenomenon as “spooky action at a distance” because it involves information traveling instantaneously. Name this phenomenon in which separated particles’ quantum states depend on each other.

Answer: quantum entanglement

9. Kungwe Bay, an arm of this lake, is just north of Ma-ha-le Mountains National Park, which has no roads and significant lion and chimpanzee populations. The southern end of this lake is near Nsum-bu National Park. The Lu-ku-ga River flows out of this lake near a town that was once called Albert-ville and is now called Ka-le-mie. The northeastern end of this lake is at Bu-jum-bu-ra, which is the capital of Burundi. The only lake deeper in the world deeper than this one is Lake Baikal. This lake extends south into Zambia. Name this lake along the border between Democratic Republic of the Congo and Tanzania.

Answer: Lake Tanganyika

10. As a child, this character asked his father if dying is hard after this character and his Uncle George helped his father perform a Caesarean section on a Native American woman as the baby’s father killed himself. Sam and this character were tied up by the hitmen Max and Al, who wanted to kill the Swedish boxer Ole Andreson. This character caught grasshoppers and trout after seeing the burned down town of Seney, Michigan in “Big Two-Hearted River.” Name this character who also appeared in the stories “Indian Camp” and “The Killers” by Ernest Hemingway.

Answer: Nick Adams [accept either]

***Check the score.***

11. A Francisco Goya picture by this name shows six people, including a man in black with his back to the canvas and hands in the air, a man lying by a tree, and a woman playing mandolin facing another woman with a blue headdress. A Pierre Renoir [ren-war] painting by this name shows a man leaning against a tree and a girl on the left, while the foreground shows the back of a man talking to a woman in a white and blue outfit who is a few inches off the ground. Another painting with this title used to start with a title meaning “the happy accident”, and shows a man on the ground reaching towards a woman in pink kicking off one of her shoes. Give this title common to the paintings, including the rococo work by Jean-Honoré Fragonard [zhahn aw-naw-ray frah-goh-nar].

Answer: *The Swing* [or *l’escarpolette* or *La balançoire* or *El columpio*]

12. In graph theory, this measure of a circuit is also known as the cyclomatic number and gives the fewest number of edges that must be removed to eliminate all cycles. This term also names a measure of a graph equal to the number of vertices minus the number of connected components. In computer science, this term refers to the number of dimensions of an array. This term gives the measure of a matrix equal to the number of linearly independent rows it has, which equals the number of independent columns. The number of columns of a matrix equals what property plus the nullity?

Answer: rank

13. The grandmother of these figures sends them a warning by using a louse hidden in a toad hidden within a snake hidden within a falcon. These figures trick their elder brothers into climbing up a tree and turning into howler monkeys. One of these figures is decapitated while hiding in the House of Bats. These figures used a fake crab to lure Zi·pac·na and crush him under a mountain, and they defeated his father by swapping his jeweled teeth for corn. These enemies of Seven Macaw go to the underworld and play ballgames against the Lords of Xibalba [shee-BAHL-bah] in the *Popul Vuh*. Name this pair of brothers from Mayan mythology.

Answer: Hero Twins [accept Hunahpu and Xbalanque in either order]

14. During this dynasty, Shi Miyuan selected Zhao Yun as emperor, who for much of his reign was more interested in prostitutes than politics. Jia Sidao then instituted accountability measures for military leaders and broke up large landholdings as chief counselor. The Chan·yuan Treaty ended this dynasty's fighting with the Li·ao dynasty. This dynasty started with Emperor Taizu, who ended the Five Dynasties and Ten Kingdoms period and the Later Zhou dynasty. Name this dynasty that ruled China from the 10th to the 13th century until its defeat by the Yuan Dynasty, and which is broken down into northern and southern periods.

Answer: Song dynasty [or Sung or Zong or Northern Song or Southern Song dynasty]

15. Robert Frost described a dimpled one of these animals on a white heal-all flower holding up a moth. In a poem about one of these animals, Walt Whitman wrote “and you, O my soul, where you stand, / surrounded, surrounded, in measureless oceans of space”. Emily Dickinson said that this animal has never been employed as an artist, and in another poem she said that the strategy of one of these animals was physiognomy [fiz-ee-AHG-nuh-mee]. Name this subject of Robert Frost's poem “Design”, which in an Emily Dickinson poem sewed at night, and which in a Walt Whitman poem was “noiseless” and “patient”.

Answer: spiders [prompt on arachnids]

**Check the score.**

16. This adjective describes a zone on the side of a volcano that lava can erupt from, most commonly found on shield volcanoes. Another type of zone described by this adjective is a location on the Earth's surface where land has separated, such as the Gulf of Suez and the Gulf of California. Such zones are created the same way as the valleys described by this adjective, and they are very similar to the ridges created by seafloor spreading. Such valleys can contain major lakes such as Baikal and often form at faults. Give this adjective for valleys such as the great one in East Africa where the Leakeys discovered Lucy.

Answer: rift [accept rift zones or rift valleys]

17. In 2015, Spain arrested a former worker for this group — Héctor Albeidis Buitrago [EK-tor ahl-bay-EE-dees bweet-RAH-goh] — who was nicknamed “The Nurse” and had performed several forced abortions. This group formed after a failed attempt to create the Republic of Marquetalia [mar-kay-TAL-yah]. This group's former leader Pablo Catatumbo started discussions with Henry Acosta that eventually led to negotiations in Cuba, which in turn led to an agreement on reparations to victims that is allowing this group to transition into a political party, though the future of the deal is uncertain due to a failed referendum. Name this guerrilla group that in 2016 reached an agreement with President Juan Manuel Santos to end 50 years of fighting in Colombia.

Answer: FARC(-EP) [or Revolutionary Armed Forces of Colombia — People's Army or Fuerzas Armadas Revolucionarias de Colombia — Ejército del Pueblo]

18. Zachary Taylor's presidential campaign claimed that he told this person “Give them a little more grape” at the Battle of Buena Vista. Later, as a general, this person lost the Tullahoma Campaign while overseeing William Hardee, Leo-ni-das Polk, Nathan Forrest, and Joseph Wheeler. This person was promoted to general at Shiloh when P. G. T. Beauregard made him second-in-command after the death of Albert Sidney Johnston. This general was successful at Chick-a-mauga, one of several battles at which he led the Confederate Army of Tennessee against William Rosecrans. Name this Confederate leader who eventually lost the Battle of Chattanooga.

Answer: Braxton Bragg

19. One character in this play places the initials “M.I.R.C.” after his name, meaning “Member of the Idle Rich Class”, and he writes the book *The Revolutionist's Handbook and Pocket Companion*. In this play, Ann is criticized for justifying her decisions by saying “Father wishes me to” or “Mother wouldn't like it.” This play opens with Octavius Robinson and Roebuck Ramsden talking about the sudden death of Ann's father. Much of this play centers on the efforts of Ann to marry the anarchist John Tanner. Name this George Bernard Shaw play that contains a scene nicknamed *Don Juan in Hell*.

Answer: Man and Superman

20. Before analyzing these compounds using mass spectrometry, they can be treated with iodine-acetamide [“EYE”-oh-“DIE”-uh-SEE-tum-“eyed”]. These compounds are studied in an adaptation of the Southern blot that relies on antibody cross-reactivity. Gel electrophoresis with these compounds is typically done using a polyacrylamide [“poly”-uh-KRIL-um-“eyed”] matrix, and they are typically reacted with the detergent SDS in order to linearize them by denaturing. The secondary structure of these compounds are the hydrogen bond-linked alpha helices and beta sheets, and their properties are dependent on the side chains, or R groups, of their components. Name these biomolecules composed of amino acids.

Answer: proteins [or polypeptides or polyamides]

*This is the end of the packet.*