

# Scobol Solo 2016

## Championship II (Phase II: Questions 21-40)



21. Five years after this experiment, Thomas E. Phipps and J. B. Taylor reproduced it using hydrogen instead of a metal. This experiment was consistent with an electron theory developed by George Uhlenbeck and Samuel Goudsmit three years later. This experiment used an unusually-shaped magnet so that the field strength was dependent on vertical position. Though classical physics predicts that a beam going through the magnetic field would be broadened, this experiment found that the beam was in fact split into two equal parts. Name this 1922 experiment that used silver atoms to show the quantization [kwan-tih-ZAY-shun] of the orientation of angular momentum.

Answer: Stern-Gerlach experiment

22. Temples for this deity often contained a winged lion-headed creature entwined by one or two snakes. Worshippers of this god had a series of seven levels for initiates, and met in underground temples. He and his helpers Cautes [“COW”-tuss] and Cautopates [“cow”-tuh-PAH-tus] wear Phrygian [FRIJ-ee-un] caps. Depictions of this god’s birth show him emerging from a rock carrying a torch and a dagger. This god is often seen dining with Sol Invictus, and is most commonly depicted slaying a bull in a scene called the Tauroctony [taw-“ROCK”-tuh-nee]. Name this Persian sun god who was worshipped by a mystery cult popular with Roman soldiers.

Answer: Mithras

23. Suffering from a long bout with stomach cancer, this person tried to resign when Franklin Roosevelt died, but Truman sent this person to meet with Stalin to arrange the Potsdam Conference. This person had been a social worker, but became known to Roosevelt as chair of the New York State Temporary Emergency Relief Administration. He spent five million dollars on aid in his first two hours heading the Federal Emergency Relief Administration. Name this person who moved into the White House to help Roosevelt, became Secretary of Commerce, and headed the Works Progress Administration.

Answer: Harry Hopkins

24. In one novel by this author, Karanja is suspected of being a traitor, but the person who actually betrayed Kihika is Mugo. One novel by this author contrasted the traditional practices in Kameno with the Christian practices in Makuyu, and it portrays Waiyaki’s growing knowledge of the difficulty in trying to unify them. Another novel by this author is about an attempt to build a skyscraper called Marching to Heaven by the ruler of Aburria. This author, who has written books in Gikuyu and English, has written about many fictional characters involved in the Mau Mau rebellion. Name this author of *A Grain of Wheat*, *The River Between*, and *Wizard of the Crow*.

Answer: Ngũgĩ wa Thiong’o [GOY-eh wa thee-awn-gaw] [or James Ngugi; prompt on Thiong’o]

25. This scientist is the namesake of a type of flare that, based on a glow in the Magellanic Stream, is believed to have come from the supermassive black hole at the center of the Milky Way about two million years ago. In 1951, this person discovered six galaxies, now named for him, that are expected to eventually merge. The most prominent objects named for this person are similar to quasars and blazars, but they are closer to us, and they are also similar to radio galaxies. Those objects named for this astronomer have less luminosity than quasars, and their shape is spiral. Name this astronomer who studied emission spectra from active galaxies, some of which are now named for him.

Answer: Carl Keenan Seyfert

**Check the score.**

26. This person wrote “The treatment of the Negro is America’s greatest and most conspicuous scandal.” This person’s wife won a Nobel Prize for her work on nuclear disarmament. When their home country experienced declining populations, this person and his wife wrote a book advocating for rent subsidies and free medical care, titled *Crisis in the Population Question*. This person worked with Ralph Bunche [“bunch”] on a book that used the phrase “principle of cumulation” to describe the poor status of African Americans in the United States. Name this Swedish economist whose book, cited in the *Brown v. Board* decision, is *An American Dilemma: The Negro Problem and Modern Democracy*.

Answer: (Karl) Gunnar Myrdal

27. When this person was 85 years old and living in Miami, he correctly accused his former country’s army of killing Hugo Spada-fora. He left his country two years earlier after losing a fraudulent election to Nicolás Ardito Barletta, whom this person’s supporters nicknamed “fraudito”. Before this person’s three presidencies, his brother Harmodio served as president twice. All three of this person’s presidencies ended in coups, the first one supported by the U.S. because this person liked Mussolini. The third coup against this person was in 1968 after he had been in power for eleven days, leading to control by Omar Torrijos. Name this critic of Manuel Noriega who headed Panama.

Answer: Arnulfo Arias Madrid

28. This poet wrote “we liked that foolishness” at the end of a stanza that mentions high heels and “a shining stocking” that were “gone too soon”; that stanza is at the beginning of “The Young Fools”, which is “Les Ingénus [lay zahn-zhay-noo]” in the original French. This writer’s first collection, inspired in part by Baudelaire’s *The Flowers of Evil*, was *Saturnian Poems*. This writer’s “Art Poétique” is believed to have been written from jail, where he served time for shooting his lover in the wrist. Name this Decadent and Symbolist poet who had affairs with Lucien Letinois [looss-yen lay-tee-nwah] and Arthur Rimbaud [ar-toor ram-boh].

Answer: Paul(-Marie) Verlaine

29. One painting by this artist shows a Cupid on the right side restraining a horse, while a Cupid on the left side ties a love knot around the legs of the title characters. This painter of *Mars and Venus United by Love* created a work whose name was changed after he was charged with heresy for including a dog at the Last Supper but excluding Mary Magdalene. This artist painted himself, Titian [TEE-shun], Tin-tor-etto, and Bassano as musicians placed below Jesus. In that picture, jugs are being filled with water in preparation for the first miracle of Jesus. Name this 16th-century artist of *The Feast in the House of Levi* and *The Wedding at Cana*.

Answer: Paolo Veronese [or Paolo Caliari]

30. A reaction analogous to this type of reaction is the key to a ring-opening polymerization [puh-LIM-ur-ih-ZAY-shun] called ROMP and can be catalyzed by Grubbs' catalyst. The 2005 Nobel in Chemistry went to Robert Grubbs, Richard Schrock, and Yves Chauvin [eev shaw-van] for their work investigating a reaction of this type that is performed on alkenes [AL-keenz]. Oxidation states do not change in this type of reaction, one example of which is the reaction of an acid and a base. Solubility rules predict whether a precipitate forms from this type of reaction after counter-ions are exchanged. Name this type of reaction in which species exchange bonds, such as compound AB reacting with CD to form AD and BC.

Answer: double-displacement reaction(s) [accept salt metathesis reaction(s) or double-replacement reaction(s); prompt on replacement reaction(s) or displacement reaction(s)]

**Check the score.**

31. Daniel Defoe described this battle as “an army of the bravest fellows in the world, beaten by scoundrels”. At this battle, Boris Sher-e-metev avenged his loss at the Battle of Holof-zin. A few days after this battle, the losers surrendered at Pe-re-vo-loch-na. Aleksandr Pushkin's poem about this battle focuses on Ivan Mazepa's break with Russia. Field Marshal Carl Gustav Rehnskiöld [REE-in-“hold”] was kept captive for several years after he was captured during this battle. Charles XII [12] of Sweden was ineffective at this battle due to an earlier injury and was barely able to escape. Name this victory for Peter the Great in the Great Northern War.

Answer: Battle of Poltava

32. This national park is just north of land that was swapped in a recent effort to consolidate government land, called the Cain Creek Land Exchange. That land is part of the Conata Basin just south of this park's Yellow Mounds Overlook. This park's highest point is on Red Shirt Table. This park is surrounded by Buffalo Gap National Grassland. Some of it was used as a bombing range by Ellsworth Air Force Base. Its southern portion overlaps the Pine Ridge Indian Reservation and is near Wounded Knee Creek. This park is southeast of the Black Hills and south of Wall, South Dakota. Name this national park whose name comes from the fact that its terrain is difficult to travel through.

Answer: Badlands National Park

33. This composer claimed at various times to have written seven, eight, or twelve sonatas, but the only complete ones that have been found are numbered three, four, and five. A publishing house started by Friedrich Hofmeister finished a collection of eight pieces that this person started, in which each piece is named for a place, and which ends with the capriccio [kah-PREET-choh] *Cuba*. One of this composer's works for piano was transcribed for guitar by Andrés Segovia, and was originally titled *Leyenda* [lay-EN-dah]. Other guitarists transcribed his *Tango in D*. Name this composer whose *Suite española* [es-pahn-YOH-lah] includes *Asturias*.

Answer: Isaac (Manuel Francisco) Albéniz (y Pascual) [ee-SAHK ahl-beh-NEETH]

34. A character in this play says “You’re shameless and evil! Even if you are my mother, I say it!” after the young woman had said she was going to visit Hazel and Peter but actually went to New York, where she heard her mother say, “I love you, Adam.” Adam is a sea captain who, like many characters in this play, has a mask-like face. The woman who was addressing her mother in this play eventually tells the gardener Seth Beckwith to board up the windows so she can live alone in her dark house. The character of Adam Brant parallels that of Aegisthus [ee-JISS-thuss] in Greek myth. Name this Eugene O’Neill that updates the *Oresteia* [or-iss-TAY-uh] by Aeschylus [ESS-kuh-luss].

Answer: *Mourning Becomes Electra*

35. The type of this process named for Josiah Willard Gibbs is a Markov-chain Monte Carlo algorithm designed to improve statistical inference. The stratified type of this method generally is more accurate but more expensive than the cluster type. The frame named for this process is a list of things that can be measured. Many possible errors lead to selection bias. The fraction named for this process equals the number of objects measured divided by the number of objects that could be measured. Name this process of selecting a subpopulation to be measured in a study.

Answer: sampling or sample

### Check the score.

36. This person wrote and directed a documentary that blamed the Great Recession on cultural forces, *Generation Zero*, which was funded by Citizens United. This person and Peter Schweizer [SHVYT-zur] co-founded the Government Accountability Institute, which funded Schweizer’s book *Clinton Cash*. This person was criticized for registering to vote using the Florida address of his third ex-wife Diane Clohesy [KLOH-see], and his second ex-wife claimed that he didn’t want their daughters attending a school with a lot of Jews. Name this person who in August 2016 stepped down as the executive chairman of Breitbart News to become the chief executive of the Trump campaign.

Answer: Stephen (“Steve”) K. Bannon

37. This pope made a secret agreement with France that led to John Stewart, Duke of Albany's failed attempt to conquer Naples. He then allied with France's enemies after the Battle of Pavia. This pope then joined with France, Venice, and Milan in the League of Cognac ["CONE"-yahk]. This man was the last pope to coronate an emperor, giving Charles V the title of Holy Roman Emperor a few years after Charles sacked Rome. This Medici pope was made a cardinal by his cousin Leo X. Name this pope who excommunicated Thomas Cranmer and King Henry VIII [8] after refusing to annul Henry's marriage to Catherine of Aragon, leading him to lose control over the Church of England.

Answer: Pope Clement VII [or Giulio Medici; prompt on Clement or Medici]

38. This author wrote about watching *Fawlty Towers* with her dying father in the essay "Dead Man Laughing". A novel by this author begins with a suicide attempt in a car by a man who was a cyclist in the 1948 Olympics. That man has a friendship with Samad Iqbal, a Bengali whom he almost fought with in World War II. In another novel by this author, Natalie — who had been named Keisha — became a lawyer, allowing her to live far from the Caldwell Project. That novel, named for a sector of London, is *NW*. Name this currently-active author who wrote about Archie Jones in *White Teeth*.

Answer: Zadie Smith

39. In 2004, Harvard University moved plywood sculptures by this man from a dining hall to its Fogg Museum. This artist made four shapes that used to hang outside the UNESCO [yoo-NESS-koh] library, which he called *Constellation*. This artist often collaborated with his wife Sophie Taeuber [TOY-bur], who is now pictured on Swiss money. This artist used bronze for his *Evocation of a Form: Human, Lunar, Spectral* and his *Torso*, which shows only the beginnings of arms and legs. This artist, Max Ernst and Tristan Tzara, started Dadaism. Name this artist with many works in Strasbourg, who — depending on whether he was speaking German or French — used the first names Hans and Jean [zhahn].

Answer: Jean Arp or Hans Arp

40. These non-aromatic constructs are responsible for a weak absorbance at 280 nanometers. When glutathione [GLOO-tuh-"THIGH-own"] is oxidized, it will dimer-ize ["DIE"-mur-"eyes"], forming one of these structures. Beta-mercapto-ethanol ["beta" mur-"CAP-toe-ethanol"] cleaves these structures by reducing them. The PDI enzyme is responsible for forming them. Keratin's strength can be attributed to having many of these structures. These sobonds are formed by linking a pair of cysteine [SISS-tuh-een] side chains, which contain thiols ["THIGH-awls"]. Name these bonds in the tertiary structure of proteins.

Answer: di-sulfide bonds [or di-sulfide bridges or di-sulfide linkages or sulfur-sulfur bonds; prompt on cystines]

***This is the end of the packet.***