

# Scobol Solo 2022

## Packet 12 (Round 12)

1. Because this scientist helped his assistant Charles Chamberland get a patent, they are sometimes both credited for the development of Chamberland's water filter. The "point" named after this scientist is a level of oxygen in the atmosphere that allows for aerobic respiration. The effect named after this scientist is the relationship between oxygen and the rate of fermentation. The process named after this scientist uses heat to extend the shelf life of foods and drinks. Name this French scientist who developed early vaccines and figured out how to slow down the contamination of milk.

Answer: Louis Pasteur

2. The first person who held this position was successfully pressured to resign from a similar position after England gave intercepted letters from Joseph Fauchet [foh-shay] to the United States. During the Civil War, this position was held by Edward Bates, who favored a constitutional amendment to end slavery instead of the Emancipation Proclamation. In both 1991 and 2019 William Barr was appointed to this position, which is currently held by Merrick Garland. Name this position first held by Edmund Randolph, the head of the Justice Department.

Answer: United States Attorney General [accept AG]

3. Part of one novel by this author takes place in Sierra Vista, where Judge Scott says "You can never cure a chicken-killer." This author depicts Judge Scott changing his mind after an attack by Jim Hall and discussions with the judge's son Weedon Scott. In another novel by this author, the warnings given by John Thornton are ignored, leading to the deaths by drowning of some characters. Many of this author's characters participate in gold rushes. Name this author who wrote about canines in *White Fang* and *The Call of the Wild*.

Answer: Jack London [or John Griffith Chaney]

4. This country contains the Northern Wari near its major city of Chiclayo, which is also where the Moche [MOH-chay] culture lived in ancient times. This country's Misti Volcano is near its second-most populous city, Arequipa [ah-ray-KEE-pah]. About one-fourth of this country's population speaks Quechuan [KECH-wahn], which was the main language of the Incan Empire, whose onetime capital Cusco was in what is now this country. This country's Pacific coast is between Ecuador and Chile. Name this country whose capital is Lima [LEE-mah].

Answer: (Republic of) Peru [or (República del) Perú]

5. Blood from several organs is taken to this organ by the portal vein. This organ stores vitamin A. The falciform [“FALL”-sih-form] ligament splits the left lobe of this organ and connects this organ to the front body wall. This organ can convert glycogen into glucose and vice versa. This organ creates bile, which is then stored below this organ in the gallbladder. This organ is better than others at natural regeneration because of the behavior of hepatocytes [heh-PAT-oh-“sites”]. Name this organ that gets inflamed in hepatitis and that gets scarred in cirrhosis.

Answer: liver

***Check the score.***

6. During this war, U.S. forces under James Wilkinson lost the Battle of Crysler’s Farm despite having almost ten times as many soldiers as the enemy, and U.S. forces lost the Battle of Queenston Heights despite the death of Isaac Brock. The message “We have met the enemy and they are ours” was sent by Oliver Hazard Perry after this war’s Battle of Lake Erie. Francis Scott Key was inspired to write “The Star-Spangled Banner” by fighting at Fort McHenry during this war. Identify this war fought during the presidency of James Madison and which is named for the year it started.

Answer: War of 1812 [prompt on Sixty Years’ War]

7. One poem by this writer is narrated by somebody who approaches death thinking, “The Stillness in the Room was like the Stillness in the Air.” This poet ended that poem “And then the Windows failed—and then I could not see to see.” Another poem by this writer says “We paused before a house that seemed a swelling of the ground.” At the end of that poem by this writer, the narrator notices “the horses’ heads were toward eternity”. Name this poet from Amherst, Massachusetts who wrote “I heard a fly buzz—when I died” and “Because I could not stop for Death.”

Answer: Emily (Elizabeth) Dickinson

8. This performer’s band included the trombonist Juan Tizol [TEE-zol], who after a drum opening sets the tempo for the song “Caravan”. Tizol also wrote “Perdido”, which usually did not have a vocalist, but Ella Fitzgerald sang it on an album just before this performer’s “Cotton Tail” and “Do Nothin’ Till You Hear from Me”. A song composed by this performer and Barney Bigard begins “You ain’t been blue; no, no, no; / You ain’t been blue till you’ve had that mood indigo.” This performer’s signature tune was by Billy Strayhorn and about going between Brooklyn and Harlem. Name this pianist whose band performed “Take the ‘A’ Train” and whose nickname was due to him behaving like royalty.

Answer: (Edward Kennedy) “Duke” Ellington

9. A constant times this quantity divided by aperture diameter is used to calculate the angular resolution according to the Rayleigh criterion. The expression “Planck’s constant divided by momentum” is used to calculate the type of this quantity associated with matter and named for Louis de Broglie [loo-ee de broy-ee]. This quantity times frequency equals the speed of a wave. The frequency and this quantity are changed in opposite directions by the Doppler effect. Name this quantity, often represented by the letter lambda, that equals the distance between wave peaks.

Answer: wavelength [prompt on length]

10. A recent model of these things based on activation, input-output gating, and modulation was developed from work by John Allan Hobson and Robert McCarley to develop the activation-synthesis hypothesis. A famous example of one of these things involved Dr. M and Otto and is called “Irma’s injection”. The person who described that example said that these things are wish fulfillment. That example is described in Sigmund Freud’s book on the interpretation of these things. Name these images that people experience during R.E.M. sleep.

Answer: dreams [prompt on sleep or REM]

***Check the score.***

11. This king signed the Dissolution of Lesser Monasteries Act, which was a major reason that Robert Aske led the Pilgrimage of Grace revolt against him. This king was succeeded by his son Edward VI [6], who only lived to the age of 16 and who probably would have married Mary, Queen of Scots if he had lived longer. The First Act of Supremacy confirmed that this king was the Supreme Head of the Church of England. This king broke with Pope Clement VII [7] when the pope refused to annul this king’s marriage to Catherine of Aragon. Name this 16th-century English king who married six women.

Answer: Henry VIII [8] [prompt on Henry]

12. These objects were the most common subject in paintings by the early-17th-century artist Ambrosius Bosschaert [ahm-BROH-see-uss BOHSS-kart] and his sons, all of whom painted many still lifes. In 1964, Andy Warhol temporarily avoided pop culture subjects to paint these objects, using bright colors such as red, orange, purple, and pink. Several types of these objects were painted by Georgia O’Keeffe, including in her red canna paintings. Many still life paintings show these objects in vases. Name these objects such as irises and lilacs.

Answer: flowers [prompt on hibiscuses between “Andy” and “O’Keeffe”]

13. The protagonist of this story sees that his alarm was “set for four o’clock as it should have been”, but “it was half past six and the hands were quietly moving forward”. This story’s protagonist is in a room that has a collection of textile samples and a framed picture that he had cut out of a magazine. When the protagonist of this story first tries to leave his room, he is shoved back by his father, and a clerk runs out of the family apartment. The protagonist of this story later leaves his room to listen to his sister play violin. Name this story in which Gregor Samsa becomes a horrible vermin, which was written by Franz Kafka.

Answer: *The Metamorphosis* [or *Die Verwandlung*]

14. In July 2022, this country’s Five Star Movement stopped supporting this country’s then-prime minister, who had been the president of the European Central Bank. During the ensuing election, the leader of this country’s Democratic Party stated that this country “could become a B-class European country like Poland and Hungary”. The winner of this country’s recent election, who supports the use of naval blockades to prevent immigration from Africa, is Giorgia Meloni [JOR-jah meh-LOH-nee]. Name this country whose other recent prime ministers have included Mario Draghi [DRAHG-ee], Giuseppe Conte, and Sergio Mattarella.

Answer: Italy [or Italian Republic or Italia or Repubblica Italiana]

15. (Note to moderator: in the second sentence, “maps” is a verb.) This surface is generated in cylindrical coordinates by setting  $r^2 + z^2$  [“*r squared plus z squared*”] equal to a constant. Stereo-graphic projection maps this surface onto a plane, though one of the points on this surface does not get mapped and is called the point at infinity. The shortest distance between two points on this surface is an arc of a great circle. This surface consists of all points in three dimensions that are a fixed distance from a fixed point; the point is the center of this surface and the distance is the radius. Name this surface whose surface area is 4 pi times the radius squared.

Answer: (2-)sphere

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

16. This composer’s requiem was written after the death of his mother but also inspired by the death of his friend the composer Robert Schumann 10 years earlier. That requiem by this composer uses the Luther Bible. This composer stated “one laughs while the other cries” when describing the two overtures he wrote in 1880 for the University of Breslau. One of this composer’s most popular pieces is formally called “Wiegenlied [VEEG-en-leet]”. Name this German Romantic composer of *A German Requiem*, *Tragic Overture*, *Academic Festival Overture*, and the lullaby sometimes called “Cradle Song”.

Answer: Johannes Brahms

17. In this play, the mother of the main characters states “Bloody thou art, bloody will be thy end; Shame serves thy life and doth thy death attend.” This play is not *King Lear*, but in it, Gloucester [GLAWSS-tur] states “The world is grown so bad, that wrens make prey where eagles dare not perch.” At the beginning of this play, the title character states “Now is the winter of our discontent”, and at the end, the title character exclaims “A horse! a horse! My kingdom for a horse!”. Name this history play by Shakespeare named for the last Plantagenet [plan-TAJ-uh-net] king.

Answer: (*The Tragedy of King*) Richard III

18. When Heraclius [heh-RAK-lee-uss] took over this city, he responded to a question from Phocas [“focus”] by beheading Phocas. This major city was besieged after the Siege of Zara by the Fourth Crusade, leading to Isaac II Angelos and Alexios IV Angelos becoming co-emperors. After Mehmed II conquered this city, he made it the capital of the Ottoman Empire. This city lost its capital status when Ankara was made a capital. Name this city in what is now Turkey that used to be named New Rome and Byzantium.

Answer: Constantinople [accept Istanbul or Konstantinoupolis; prompt on Byzantium or New Rome before each is respectively mentioned]

19. The no-hair theorem claims that these things can be completely described by their mass, electric charge, and angular momentum. The radius of one of these things is proportional to its mass and called the Schwarzschild [SHVARTS-“child”] radius. The boundary of one of these things is called the event horizon, from which it is believed that Hawking radiation is emitted. These things are formed when massive stars collapse, and there are super-massive examples of these things at the center of many galaxies, including the Milky Way. Name these objects that possibly nothing can escape from, including light.

Answer: black holes

20. When this person asked “Woman, why are you crying?”, the woman thought he was the gardener. Earlier, when this person was 12, his mother asked him “Son, why have you treated us like this?”, and this person replied “Why were you searching for me? Didn’t you know I had to be in my Father’s house?”. As an adult, this man said “My hour has not yet come” before telling servants “Fill the jars with water.” Those words were spoken by this person at the wedding at Cana [KAY-nuh], where this person turned water into wine. Name this person whose story is told in the books of Matthew, Mark, Luke, and John in the New Testament.

Answer: Jesus Christ (of Nazareth) [accept either underlined name]

***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. In 2007, this architect's water dome finally opened, many decades after it had been cemented over. That fountain, the Annie Pfeiffer Chapel, and several other projects were part of this architect's *Child of the Sun* project for Florida Southern College. This architect designed a stack of cylinders that are wider at the top than at the bottom, and which contain a spiral gallery, for the New York Guggenheim. This architect worked near Spring Green, Wisconsin and Scottsdale, Arizona at his studios, which he named Taliesin [tal-ee-ESS-in] and Taliesin West. Name this Prairie School architect who designed many houses in Oak Park, Illinois as well as Pennsylvania's Fallingwater.

Answer: Frank Lloyd Wright

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

- <sup>TB</sup>22. These events can include *pheres* [FAIR-ayz]—or hymns—called the four Laavan, each of which is sung while people walk around the *Guru Granth Sahib*. These events can be done while standing under a canopy called a huppah [HOO-pah], in which case they include signing a ketubah [keh-TOO-bah] and breaking a glass. These events can include the Saptapadi [sup-tuh-PUD-ee], which is seven trips around a holy fire. These events typically begin with a processional and end with a recessional. Name these events that generally include an exchanging of vows and exchanging of rings between two people, traditionally a bride and groom.

Answer: weddings [or wedding ceremony/ies; accept marriages]

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

- <sup>TB</sup>23. This is the number of *Reasons Why* in the title of a young adult novel by Jay Asher. Triskai-deka-phobia [TRISS-ky-DEK-uh-"phobia"] is the fear of this number. Many U.S. buildings skip using this number for a floor. Name this number of colonies that formed the United States.

Answer: 13

***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.***