

NEW TRIER SCOBOL SOLO 2011

CHAMPIONSHIP: PHASE 2

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1. This writer supported the use of superstition in his book *The Devil's Advocate*, and he gained information by sending questionnaires to missionaries. After translating a description of Ancient Greece, this person wrote a book about its author, the geographer Pausanias. His most famous work refers to Diana's priest in a sacred grove near Lake Nemi, and it was controversial because it treated Biblical stories as mythological, an idea he continued in his later book *Folklore in the Old Testament*. Name this Scottish social anthropologist who in 1890 completed the book *The Golden Bough*.

ANSWER: James (George) Frazer

2. One of the commanders in this battle was unprepared for an attack from across the Orontes River and was unable to turn back the surprise attack against him until his troops arrived from the Forest of Robau. Based on the testimony of two spies, he believed that his enemy had retreated to Aleppo. Immediately after this battle, the other commander was able to gain territory for his brother Hattusili. For a time, historians believed that Muwatalli II and his Hittites had been routed at this battle, but it is now seen as a draw with Egypt. Name this large chariot battle involving Ramses the Great in 1274 BCE.

ANSWER: Battle of Kadesh [accept Battle of Qadesh]

3. This work describes, "Complaining brooks that make the meadows green," and advises, "Go forth under the open sky, and list to Nature's teachings." This poem claims that sometimes nature, "Has a voice of gladness, and a smile and eloquence of beauty," but at other times has a "still voice." The hope expressed in this poem is that the reader can, "Approach thy grave, like one who wraps the drapery of his couch about him, and lies down to pleasant dreams." Those last lines were added in 1821, after this work was published in *North American Review*. Identify this poem whose title means "sight of death", a work by William Cullen Bryant.

ANSWER: "Thanatopsis"

4. The evidence of this process is called homoplasy, and Stephen Jay Gould argued that many common examples of it are actually the result of parallelism. The spurges of Africa and cacti of North America are best explained by this concept, which also accounts for the distant ancestry of birds of prey like owls and eagles. The camera-like eye of cephalopods and vertebrates is an example of this concept, as are the mice, moles, anteaters, and wolves found among both placental and marsupial mammals. Explaining the close body shapes of sharks, dolphins, and ichthyosaurs [IHK-thee-oh-"sores"], name this mode of evolution in which unrelated species show similar adaptations due to similar environments and ecological niches.

ANSWER: convergent evolution [accept convergence; prompt on evolution; accept word forms and variations that include (forms of) both words]

5. The lower portion of an early Madonna by this painter shows two angels under Mary holding up a medallion showing Moses, while the upper portion shows the faint heads of several angels above; it is known as *Madonna with Saint Francis*. Another painting by this artist, which shows Eutychius and Victorinus already decapitated while Placidus and his sister Flavia are about to meet the same fate, is known as *Martyrdom of Four Saints*. He spent much of his career in Parma, where he painted a dome pairing the four Evangelists with the four Doctors of the Church, *Vision of St. John on Patmos*. Name this sixteenth century painter whose *Loves of Jupiter* series includes *Leda with the Swan* and *Ganymede Abducted by the Eagle*.

ANSWER: Antonio Allegri da Correggio [accept either underlined part]

6. This author wrote about an African-American evangelist, Daddy Faith, and the Reverend Carey Carr, who remembers the day he met Helen, a woman who told Carr that her husband was having an affair, and that she hated one of her daughters. He also wrote about a Pfizer employee named Nathan who is schizophrenic. Nathan is in a relationship with a Catholic woman who a few years earlier had entered Auschwitz with two children. One of his characters, Peyton Loftis, commits suicide on the same day that the bomb is dropped on Nagasaki, and a different novel by this author is narrated by Nat Turner. Name this author of *Sophie's Choice* and *Lie Down in Darkness*.

ANSWER: William Styron

7. This statement can be proven using Markov's inequality, and it can be used to prove the weak law of large numbers and Kolmogorov's inequality. Markov's inequality states that the probability of a positive random variable exceeding a given value is less than or equal to the expected value of the random variable divided by the given value, and Kolmogorov's inequality limits the sum of random variables. One consequence of this theorem is that the difference between the mean and median of a set of numbers is less than the standard deviation. Name this statement that the probability that the distance from a number in a distribution to the expected value is greater than k standard deviations is always less than or equal to one over k squared.

ANSWER: Chebyshev's inequality [or Chebyshev's theorem]

8. This ion combined with an acyl group is used to create an isocyanate in the Curtius rearrangement, and this ion combined with hydrogen can be used to change a carboxylic acid into an amine in the Schmidt reaction. A molecule with this ion can be reduced to an amine using the Staudinger reaction, and this ion combines with an alkyne in Huisgen cycloaddition. This ion is combined with sodium using the Wislicenus process, and the resulting molecule was once used in airbags. Many of its compounds are prepared using the Dutt-Wormall reaction and are very explosive. Name this anion consisting of three nitrogen atoms.

ANSWER: azides [prompt on $\text{N}_3^{(1)-}$ or $\text{N}_3^{-(1)}$]

9. This person was believed to have predicted the death of Pope Innocent the Eighth. This person's reforms, which were supported by Paolo Antonio Soderini (so-deh-REE-nee), were announced in a speech on the third Sunday of Advent. He had supported King Charles the Eighth overthrowing Piero de Medici (pee-EHR-o de meh-DEE-chee), and he often feuded with Rodrigo Borgia (rod-REE-go BOR-jya), who became Pope Alexander the Sixth. In 1498, along with his associates Fra Domenico da Pescia (PESH-ya) and Fra Silvestro, this man was burned to death under the pope's orders. Name this Dominican priest in Florence known for his Bonfire of the Vanities.

ANSWER: Girolamo Savonarola

10. This country's Szeleta Cave was inhabited in prehistoric times. That cave is located in the Bükk Mountains, and this country's highest peak is located in the Mátra Mountains. The largest lake in this country, fed by the Zala River and next to the town of Siófok, is Lake Balaton. In 2010 elections, the Fidesz Party gained political control. This country's southwestern border is formed by the Drava River, which separates this country from Croatia, and this country includes the Tisza River between Ukraine and Serbia. Its capital, which includes Heroes' Square, used to be two different cities on opposite sides of the Danube River. Name this country south of Slovakia and west of Romania whose capital is Budapest.

ANSWER: Republic of Hungary [or Magyarország; or Magyar Köztársaság]

11. The radius of this circle is equal to the area divided by the semiperimeter of its generating triangle. For triangles whose sides are Pythagorean triples, the radius of this circle is a whole number. Its center can be found by taking the weighted average of vertices of the generating triangle using opposite side lengths as weights, and it splits the triangle sides into lengths equal to the factors in Heron's Formula. The center of this circle is at the concurrence of its generating triangle's angle bisectors, and is the same distance from the three sides of that triangle. Name this circle that is tangent to all three sides of a triangle.

ANSWER: incircle [or inscribed circle]

12. Methadone and Tamoxifen are among the pharmaceuticals produced using these substances, which must be prepared in aprotic solvents. These compounds are often synthesized in a nitrogen atmosphere to avoid water and oxygen, and ethers are some of the few organic molecules these substances will not react with. It took more than fifty years to successfully make one of these substances with fluorine, and their chemical mechanism is based on the reversed polarity of a carbon bond. Consisting of an alkyl or aryl group, a magnesium atom, and a halide, these are commonly used to reduce ketones or aldehydes to alcohols. Added to carbonyl groups to create carbon-carbon bonds, name this class of reagents.

ANSWER: Grignard (GRIN-yard) reagent

13. The monk Junkobo introduced this person to Matsushita Yukitsuna, who instructed this man in martial arts. The son of peasant parents, he supposedly served as a sandal-bearer during a victory over Imagawa Yoshimoto, and he was later promoted after his siege of Inabayama Castle. One of this leader's major victories was at the Battle of Yamazaki, where he killed Mitsuhide to avenge the death of Oda Nobunaga. This person then defeated the Tokugawa and Shibata clans to unify Japan, though he would be succeeded by Tokugawa Ieyasu. Name this leader of the Azuchi-Momoyama period who is considered the second great unifier of Japan.

ANSWER: Toyotomi Hidegoshi [accept either or both names; accept Hokoku; accept Hiyoshimaru; accept Nakamura; accept Tōkichirō; accept Takayoshi]

14. One character in this novel is made fun of as a boy because his father is a retail salesman. That character later buys a piano at an auction and, when that action is not appreciated, moves to India. One of the characters in this novel is a woman who has trouble deciding which nephew to put in her will, Pitt or Rawdon. Rawdon's wife has an affair with the Marquess of Steyne. This novel opens with the two main characters finishing Miss Pinkerton's Academy for Young Ladies. Name this work about Amelia Sedley and Becky Sharp written by William Makepeace Thackeray.

ANSWER: Vanity Fair

15. This composer wrote a symphonic poem inspired by an Arnold Böcklin painting, and he collaborated with Anton Arensky, Alexander Glazunov, and Sergei Taneyev to write a collection titled *Four Improvisations*. His third piano concerto was famously recorded by David Helfgott and Vladimir Horowitz, and he wrote a choral symphony based on Edgar Allan Poe's "The Bells". His best-known work includes twenty-four variations on the twenty-fourth and final part of another composer's work. Name this composer who made a piano transcription of Nikolai Rimsky-Korsakov's *Flight of the Bumblebee* and wrote *Variations on a Theme of Corelli* and *Rhapsody on a Theme of Paganini*.

ANSWER: Sergei Rachmaninoff

16. This organization took its name from a speech by Isaac Barré, and The Improved Order of Red Men claims to be descended from this group. One member of this group, Isaac Sears, started the Battle of Golden Hill, and this group was associated with the actions of James Sabin and Abraham Whipple during the Gaspée Affair, which ended with the torching of a ship. This secret society was closely associated with several poles in New York City and a tree in Boston where it often met. Name this group believed to have formed in reaction to the Stamp Act which was joined by Samuel Adams and which is generally considered responsible for the Boston Tea Party.

ANSWER: Sons of Liberty [accept Liberty Boys]

17. When this character learns to read, he insists on being taught from the book *Rasputin and Women*, and he later disagrees with Maria about which of them started using fizz powder earlier. This character is found guilty after finding the finger of a murdered woman and is placed in a mental hospital where his watcher Bruno turns pieces of string into knots. He considers both Alfred and Jan (JON) to be his fathers, and he works for Bebra when he leaves Danzig. This character is four feet one inch tall, and he cherishes a gift he received for his third birthday. Name this protagonist of Günter Grass's [GRAHS's] *The Tin Drum*.

ANSWER: Oskar Matzerath [accept either part]

18. In the book of Galatians, this person's mother is connected to the covenant from Mount Sinai. Before this person was born, an angel said that he will live in hostility toward all his brothers, and a later prediction says that he will beget twelve princes. According to Islamic traditions, when this person was an infant, his cries for water and kicking led to the creation of the Zamzam Well, and he helped his father to build the Sacred Mosque in Mecca. His only daughter, Mahalath, became the third wife of Esau, and his mother is described as an Egyptian handmaid. Name this half-brother of Isaac, the son of Hagar and Abraham.

ANSWER: Ishmael [or Ismail]

19. The second scene of this opera begins with a harp solo representing snow falling while the title character awaits a tryst with her lover. When that lover later interrupts the title character's wedding, the main characters sing the sextet "Chi mi frena in tal momento?" That lover, Edgardo, is bound in a blood feud with the heroine's brother, Enrico, who wants to force her to marry Arturo to save the family fortune. The title character, who never recovers from the death of her mother, sings "Il dolce suono" while going mad at the end of this opera, which is based on a novel by Sir Walter Scott. Name this tragedy set in Scotland by Donizetti.

ANSWER: Lucia di Lammermoor [or Lucy of Lammermoor; accept Lucia of Lammermoor]

20. The type of this effect that occurs when the Landé g-factor is greater than one could not be explained until electron spin was discovered and is called anomalous. The change in energy that causes this effect varies directly with the magnetic quantum number, and this effect does not involve a static electric field, unlike the similar Stark effect. When the angular momentum quantum number is not constant, the Paschen-Back Effect occurs instead of this effect. Used in Mössbauer spectroscopy and other spectroscopies involving magnetic spin resonance, name this splitting of spectral lines caused by a magnetic field.

ANSWER: Zeeman (ZAY-mun, but be lenient) effect

TB5. In one work by this artist, the title figure lies in the lower right corner with a red cloth and white beard, while the foreground shows John the Baptist with a reed cross pointing up with a long finger at Mary and Baby Jesus. Another work by this artist, in which the title figures have vases on their heads, is *Three Foolish Virgins Flanked by Adam and Eve*. In addition to *The Madonna and Child with Saints*, which is also known as *Vision of Saint Jerome*, this artist painted a round self-portrait showing at the bottom his large hand with a small pinkie ring. He also painted a crowd of angels on the left next to a large Baby Jesus held by a swan-like Mary. Name this artist of *Self-Portrait in a Convex Mirror* and *Madonna with the Long Neck*.

ANSWER: Parmigianino (par-mah-zhah-NEE-noh) [or (Girolamo) Francesco (Maria) Mazzola]

TB6. This person's first book, about his travel to the Portuguese colony of Goa, is subtitled *Six Months of Sick Leave*, while near the end of his life he claims he was attacked by Mohammed Rashid Pasha while serving as a diplomat in Damascus. Because his traveling companion John Hanning Speke was temporarily blinded, this person was the first European to see Lake Tanganyika, and this person also went on a famous trip to Mecca in 1853 though he was not a Muslim. Name this explorer who also translated works such as *One Thousand and One Nights*.

ANSWER: Sir Richard Francis Burton

TB7. Substitutions of this function can help integrate functions that contain the square root of the quantity k squared plus x squared, and a ratio with this function in both its numerator and denominator is used to find the ratio of the difference of two side lengths in a triangle divided by the sum of the same two side lengths. The graph of the hyperbolic version of this function has horizontal asymptotes at positive and negative one, and the graph of the *inverse* of this function has horizontal asymptotes at positive and negative π over two. The square of this function plus one equals the square of the secant function, and the name of this function is used to describe a line that touches a curve at one point. Name this trigonometric function that equals sine divided by cosine, and which for an acute angle in a right triangle equals the length of the opposite leg divided by that of the adjacent leg.

ANSWER: tangent function [accept tangent of x , etc.; do not accept “cotangent”]