NEW TRIER SCOBOL SOLO 2010
ROUND 9
Questions written and edited by David Reinstein
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1. This pathogen leads to an increase in protein p16 but inactivates it. Research on this pathogen led to the 2008 Nobel Prize in Medicine for Harald zur Hausen and two of its more than one hundred types cause flat warts on the hands and plantar warts on the feet. Genes E6/E7 of types sixteen and eighteen of this virus promote deadly tumor growth in infected epithelial tissue. The vaccines against it are called quadrivalent because they protect against four types of this virus, which is considered by the CDC to be the most common sexually transmitted disease. Name this virus targeted by the vaccines Gardasil and Cervarix which causes cervical cancer.
ANSWER: **HPV** [or **human papilloma** virus; prompt on **papilloma**virus]

2. One of the characters in this story watches a small orange reptile contort itself violently before dying, causing him to ask, "What is this being?—beautiful, shall I call her?—or inexpressibly terrible?" That character, who has some short conversations with Lisabetta (lee-suh-BET-ta) and receives advice from Professor Baglioni (bayh-lee-OE-nee), is a University of Padua student named Giovanni Guasconti. This work first appeared in *Mosses from an Old Manse* and features the title character Beatrice, who is beautiful but harmful to any being she comes into contact with because she has been raised among poisonous plants. Name this story by Nathaniel Hawthorne.
ANSWER: "**Rappaccini's Daughter**"

3. This Canadian province contains Atikaki Provincial Wilderness Park and Nopiming Provincial Park, the location of Booster and Springer Lakes. It also contains the river mouths of the Nelson and Churchill Rivers, which empty into the Southwest corner of Hudson Bay. The Red River of the North flows into this province in addition to forming the boundary between North Dakota and Minnesota. Other than the Great Bear and Great Slave in Northwest Territories, this province contains the largest lake located entirely within Canada, and that lake shares its name with this province's capital city. Its second largest city is Brandon, and it is located between Saskatchewan and Ontario. Name this province whose capital is Winnipeg.
ANSWER: **Manitoba**

4. One of the leaders of this polity has the message "You conquered all but a woman" inscribed on the side of his tomb. Centuries after that member of the Phokas family, this polity was ruled by the Lascarid Dynasty, which lost their power when John the Fourth was blinded at the age of ten and was replaced by Michael the Eighth, who organized the Second Council of Lyon (lee-YONE). Some historians mark its beginning with the crowning of Arcadius, who ruled from what was sometimes referred to as New Rome. This polity was conquered by Mehmed the Second of the Ottoman Empire with the fall of Constantinople in 1453. Name this empire that for long periods controlled what is now Greece, the Balkans, and Turkey.
ANSWER: **Byzantine** Empire [or **Nicaean** Empire; or **Eastern Roman** Empire; prompt on **Roman** Empire]

5. One sculpture by this artist shows a Paleolithic man hovering in a cave. Early in this artist's career, he was sent to South Carolina by *Harper's Weekly* as an artist-correspondent to cover an earthquake. Among this artist's works is a black-and-white picture that depicts a bicyclist challenging a stagecoach along a dusty road called *The Right of the Road* and a piece showing a cowboy and three native American guests gathered around a campfire titled *Shotgun Hospitality*. Another one of this artist's sculptures shows a small rattlesnake scaring a big horse. Name this western artist whose most famous work, a sculpture showing a man about to whip a horse, is *Bronco Buster*.
ANSWER: Frederic Sackrider **Remington**

6. This person once visited shrines without seeing anybody praying and had to turn five crocodiles back into nymphs so that the shrines could be used again. In addition to the four brothers he knew of, this person had an illegitimate brother who claimed to be a Kshatriya so he could fight. This person killed that illegitimate brother Karna during the Kurukshetra War. At the beginning of that war, this archer turned down an army in order to have his charioteer be Krishna. Name this leader who was convinced by Krishna to fight even though his family members were on the other side in the dialogue that became known as the *Bhagavad Gita*.
ANSWER: **Arjuna**

7. The polar equation theta equals this function of *r* produces a spira mirabilis, or golden spiral. The nth term of this function's Maclaurin series equals the quantity *x* minus one, quantity to the nth power, over *n*. This function can be integrated by multiplying it by *x* and subtracting *x*, and its derivative equals the reciprocal of *x*. Multiplying two numbers together and then applying this function has the same result as applying this function separately to the two numbers and adding the results, and exponents inside these functions can instead be used to multiply outside of them. This function can be transformed to other bases by dividing it by itself applied to a constant, and its discovery is often credited to John Napier. Name this inverse of the exponential function.
ANSWER: natural **log**arithm of *x* [or **log**arithm (to the base *e*); accept **ln**; accept **lg**]

8. The Parkes process relies on this property to extract silver from lead, and iron sulfide is the main component of this type of magma. This property of the liquid phase of heteroazeotropes (HEH-tuh-roh-AY-zee-oh-trohps) allows for their continuous distillation, and partition coefficients in chromatography are determined by this property of octanol. This property also prevents the formation of a copper-cobalt alloy. In general, mixtures with this property have very large, positive enthalpies of solution, while emulsifiers like lecithin (LEH-sih-thin) help overcome this property in foods such as salad dressing. Most obvious in a mixture of oil and water, identify this physical property in which two liquids are unable to dissolve in one another.
ANSWER: **immiscibility** [accept word forms; prompt on **insolubility** or word forms thereof; do not accept "miscibility"]

9. Though the composer of these pieces often played viola, he switched to harpsichord for the fifth one and gave the harpsichord a bigger part in that piece. The final one of these pieces has no violins but a part for the viola da gamba, the closest thing to a cello at the time, that probably was played by Prince Leopold. The second of these pieces gives a major but difficult role to the tromba, which is replaced by a trumpet in modern recordings. These pieces were given for free to the Margrave Christian Ludwig, though it is believed that the composer wrote them for his musicians at Coethen. These are all in major keys, the first two in F, the next two in G, the fifth in D, and the sixth and final one in B Flat. Name these Baroque compositions by Johann Sebastian Bach.
ANSWER: *Six **Brandenburg Concertos***, BWV **1046–1051** [accept either or both parts; accept *Six **Concerts à plusieurs instruments***]

10. This work imagines a situation where the speaker sits by the English River the Humber, halfway around the world from the subject, and it also imagines a period of time lasting from before Noah's flood until "the conversion of the Jews." This poem points out that people do not embrace in a grave and claims that "deserts of vast eternity" lie before both the narrator and the subject. The narrator hears, "Time's wingèd chariot hurrying near," and wishes to "sport us while we may." This poem begins, "Had we but world enough, and time." Identify this work by Andrew Marvell.
ANSWER: "**To His Coy Mistress**"

11. This activist edited *Locomotive Firemen's* magazine and the newspaper *Appeal to Reason* and worked with Victor Berger and Morris Hillquit. This person wrote an essay about receiving help from a poor umbrella mender, and he often said, "While there is a lower class I am in it." He organized the ARU, which was broken by Richard Olney and Nelson Miles after a successful strike against the Great Northern Railroad. Despite being represented by Clarence Darrow, the Supreme Court ruled that the federal government could order this leader's strike against the Pullman Palace Car Company to end and jail him for not following that order. This man received nine hundred thousand votes for President while serving time in jail. Name this leader who often ran for President in the early 20th Century as a Socialist.
ANSWER: Eugene Victor **Debs**

12. One of this writer's works contrasts the invertibility of Newtonian mechanics with the unidirectionality of heat flow; that work features a laptop, nineteenth-century quill pens, coffee mugs, and an old tutor's portfolio collecting on a table at Sidley Park. That play concerns the world of Bernard Nightingale and Hannah Jarvis merging with that of a friend of Lord Byron, Septimus Hodge, and his tutee Thomasina Coverly. This writer's first and most famous work features characters repeatedly hiding in barrels on a ship. Name this Czech-born British playwright of *Arcadia* and a play that opens with a coin coming up heads ninety-two consecutive times as it is flipped by two characters from *Hamlet*: *Rosencrantz and Guildenstern Are Dead*.
ANSWER: Sir Tom **Stoppard** [or Tomáš **Straussler**]

13. This leader was nicknamed Vert Galant because he had many affairs. His ascension to the throne included his victory over the Duke of Mayenne at the Battle of Ivry. Twenty years later, he was assassinated by François Ravaillac. One of this leader's accomplishments was the Peace of Vervins, at which Philip II recognized him as king and agreed to withdraw forces from France. His most important assistant, originally known as Rosny, became the Duke of Sully. The son-in-law of Catherine De Medici, he generally is considered to be the first Bourbon Monarch. Name this man who famously converted to Catholicism to become the King of France, the issuer of the Edict of Nantes.
ANSWER: **Henry IV** Bourbon of France [prompt on partial answer; accept **Henry** III of **Navarre** or **Henry the Great**]

14. This thinker wrote, "Treat social facts as things." This writer asked what a social fact is in his plan to turn sociology into a science titled *Rules of the Sociological Method*. He explained how to return social norms in his work *Moral Education* and began using a term referring to unclear social norms in his first book *The Division of Labour in Society*. This writer's best known work classified a particular phenomenon four different ways based on levels of social integration and moral regulation. Those four classifications are egoistic, altruistic, fatalistic, and anomic. Identify this French sociologist who wrote *Suicide*.
ANSWER: Emile **Durkheim**

15. An imbalance between the cause of this phenomenon and pressure gradients causes non-dispersive waves called Kelvin waves, and it is used to find mass flow rates by comparing the twists in vibrating tubes. With the conservation of angular momentum, this concept is used to explain the precession of Foucault (foo-KOH) pendulums. An apparent acceleration of two times angular velocity cross linear velocity, this concept shows up as the sum of two terms when one takes the second time-derivative of the position of a person walking outward on a moving merry-go-round. Name this effect in which objects appear to deflect from straight lines when viewed from a rotating reference frame.
ANSWER: **Coriolis** effect/force

16. The dihedral angles in this solid have an angle equal to the arccosine of negative root five over three, which is about 138 degrees. All of its vertices can be sorted into groups of four that form golden rectangles. One of these solids with side length two can be placed in rectangular coordinates so that each point has one coordinate equal to zero, one coordinate equal to plus or minus one, and one coordinate equal to the golden ratio. It contains thirty edges and twelve vertices, and each vertex brings together five triangles. Name this platonic solid, the dual of the dodecahedron, whose name is derived from the Greek for twenty because it has twenty sides.
ANSWER: **icosahedron**

17. When this character's mother offers to stay with him, his response is, "Don't torture me!" He also tells his sister's fiancé that he would kick him down the stairs. This protagonist lives on Carpenter Lane in a small room under the roof of a five story building and meets a heavy drinker who is trampled by a horse and is named Marmeladov. This man devises a plan upon hearing a student state that somebody's money should be redistributed to the poor and also hearing that Lizaveta will be out of the house the next day, and meets the prostitute Sonya after killing the pawnbroker Alyona Ivanovna. Identify this protagonist of Fyodor Dostoyevsky's *Crime and Punishment*.
ANSWER: **Rodion** Romanovich **Raskolnikov** [accept either or both parts]

18. This general led Abraham Eustis and William Lindsay on a failed campaign during the Second Seminole War. A few years later, this leader was supposed to replace Henry Atkinson, but, due to an outbreak of cholera (KHA-luh-ruh), half of his troops died on the way to the Black Hawk War, which was won before this man arrived. Shortly before retiring, this leader proposed blockading the South and sending troops up the Mississippi River in what became known as the Anaconda Plan. His biggest successes, achieved while future generals P.G.T. Beauregard and Robert E. Lee served under him, came at the Battles of Cerro (SEH-row) Gordo and Chapultepec (chuh-PULL-tuh-peck). After his successes in the Mexican-American War, this man unsuccessfully ran for President in 1852. Name this general nicknamed "Old Fuss and Feathers".
ANSWER: Winfield **Scott**

19. The Wieland-Miescher (VEE-lahnd MEE-shur) and Hajos-Parrish (HI-yuss PAAR-ish) examples of these compounds are products of the Robinson annulation, and another member of this class, the main ingredient in artificial butter flavoring, is diacetyl (di-uh-SEE-tuhl). In the presence of mercuric sulfate, alkynes (AL-kines) can be converted to these compounds by hydration, and though this class is not lipids (LIH-pids), it does include animal musk and the androgen steroid hormones. Common solvents in this class include the wax precipitating methyl ethyl (METH-uhl ETH-uhl) type along with the primary component of nail polish remover, and a negative result from Tollens' reagent distinguishes this class from aldehydes (AL-duh-hidz). Easily produced by oxidation of secondary alcohols, name this class of compounds in which a carbonyl (car-BON-uhl) group is bonded to two other carbons.
ANSWER: **ketone**s

20. This artist painted a bird lying on its back on a tree next to a skyscraper coming out of a volcano among many objects inside a bathtub. This artist showed the suicide of Dorothy Hale in addition to *What the Water Gave Me*. This artist also painted a few double self-portraits such as *Tree of Hope* and some single self-portraits such as the one with a monkey, the one with cropped hair, and the one in which this artist has the body of a deer shot through with arrows. One of her self-portraits was dedicated to her lover Leon Trotsky, and several dealt with the physical traumas in her life, including several miscarriages and a bus accident. Name this Mexican painter, the wife of muralist Diego Rivera.
ANSWER: Frida **Kahlo** de Rivera [or Magdalena Carmen Frieda **Kahlo** y Calderón; prompt on **Rivera** before the end]

Read the tiebreaker questions only if there is a tie after the above 20 questions. The first correct answer wins the match.

TB 1. This work portrays the creation of art as an orgasm by referring to the "earth in fast thick pants…breathing" and "a mighty fountain momently was forced". It compares a "green hill athwart a cedarn cover" to haunting under a "waning moon", and another speaker in this poem warns "Beware! / His flashing eyes, his floating hair" about a figure who has "drunk the milk of paradise". This poem imagines a five mile river that goes through caverns before entering "a lifeless ocean," a reference to the River Alph, and depicts a "damsel with a dulcimer / … / singing of Mount Abora". Its title character ordered the construction of a sunny location with "caves of ice"—his "stately pleasure-dome" in Xanadu. Identify this poem supposedly written during an opium-induced dream, by Samuel Taylor Coleridge.
ANSWER: "**Kubla Khan**"

TB 2. A massacre was committed in what is now this state by Algonquin and French troops as part of King William's War in 1690. This state is also where Commodore Woolsey and then later Major-General Brown defeated the British during the War of 1812 at Sacket's Harbor. After the Declaration of Independence was read, this is the first state where United States troops engaged in a major fight, and it is also the state where John Burgoyne surrendered to Horatio Gates. Name this state where the Siege of Fort Ticonderoga, the Battle of Saratoga, and the Battle of Long Island took place.
ANSWER: **New York**

TB 3. Name the mode of transportation that…includes the high speed Shinkansen series of Japan; was able to travel completely across America after a Golden Spike ceremony in Utah; and leaves from Platform Nine and Three-Quarters when it takes Harry Potter to Hogwarts.
ANSWER: **train** [or **railroad**]