

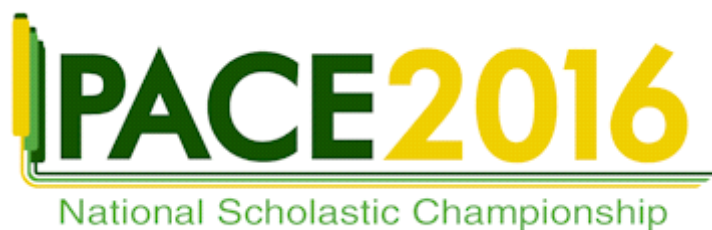
2016 NSC - Official Scoresheet

Round	04	Room	
Bracket			
Reader			

Team									Team								
Player Names																	
Q#					Bonus	Steals	Ques. Total	Run. Score					Bonus	Steals	Ques. Total	Run. score	
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Player 20s																	
Player 10s																	
Point totals																	
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	Substitutions before Tossup 11								Substitutions before Tossup 11								
	Out:				In:				Out:				In:				
	Out:				In:				Out:				In:				

Circle winning team above. Clearly mark if game goes to OT/SD. Fill out "Point totals" row completely.
 If there are substitutions, please note tossups by each player in "20s" and "10s" rows. Below is for Tab Room use only:

RH	RS	BH	BS	Left	Right	BH	BS	RH	RS
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PACE NSC 2016 - Round 04 - Tossups

1. The protagonist of this novel leaves a group after hypnotizing its leader, who had taught him exercises such as standing in a thorn bush without bleeding. After having a dream in which he throws away a dead songbird, the protagonist of this novel leaves his home and contemplates killing himself by jumping from a coconut tree. A spoiled boy in this novel steals a boat from his father, with whom he is forced to live with after his mother is killed by a snake-bite. The (*) title character of this novel abandons his work as a merchant and his relationship with the courtesan Kamala to work as a ferryman with Vasudeva. As a young man, this novel's protagonist hears the Buddha speak with his friend Govinda. For 10 points, name this novel set in India by Herman Hesse.

ANSWER: **Siddhartha** <Brownstein>

2. A piece of Canada Balsam is placed in between two specimens of this mineral to create the Nicol Prism. Ancient ooids (oh-oy-ds) are often composed from the "seas" of this substance that characterize the Paleozoic and the early Mesozoic Eras. The rock onyx is often confused for the "banded" form of this mineral found in Mexican mines. The highly unstable polymorph vaterite is converted to this mineral when it is exposed to water at low temperature. Erasmus Bartholin first observed "double (*) refraction" in a variety of this mineral known as Iceland spar. Aragonite is a polymorph of this mineral which can be found in mineral springs. For 10 points, Limestone is made of what mineral that has a value of "3" on the Mohs scale of hardness, and is composed of calcium carbonate?

ANSWER: **calcite** <Jose>

3. The man on the left of this painting has a concave pose very similar to that of a Roman cameo of Augustus riding on a Capricorn. A figure on the right of this painting places his right arm around a woman in order to touch an infant, leading many scholars to identify the pair as Mary and Jesus. Frank Lynn Meshberger argued that the shape of a human brain is created in this painting by the mass of drapery and (*) figures on the right. To the right of this painting is the scene of the water being divided from the earth. The title man in this painting is shown after formation and enlivenment but before animation. For 10 points, name this scene painted by Michelangelo for the ceiling of the Sistine Chapel where God is about to touch the first man's finger.

ANSWER: **The Creation of Adam** [or **God Creating Adam**; prompt on the Sistine Chapel ceiling until "Sistine"] <Bentley>

4. Because this man once slept with the nymph Melite, Zeus forbade her from sexual relations afterwards. Apollodorus states that this man killed a ruler of Egypt who sacrificed all of his visitors. This slayer of Busiris was once told by Xenoclea that he would be purified of killing Iphitus if he served Queen Omphale. While he traveled with the Argonauts, his companion (*) Hylas was abducted by water nymphs. This man once fought a son of Poseidon whose strength increased as he touched the earth. This man's exploits include wrestling Antaeus and murdering his music teacher Linus. He was forced to serve Eurystheus to perform a group of tasks that involved defeating the Stymphalian Birds and the Nemean Lion. For 10 points, name this Greek hero who performed twelve labors.

ANSWER: Heracles [or Hercules] <Jose>

5. This place, which was built nearby an observatory, garden and zoo in the *brucheion*, contained many *theke* along its covered walkways. At one point adjoined to the Serapeum, this place was managed by an *epistates*. A leader of this institution provided an accurate measure of the Earth's circumference and is credited with being the first geographer. Eratosthenes and Apollonius Rhodius were heads of this place, where Callimachus worked. Galen recounts a story in which (*) Ptolemy III, the grandson of the ruler who founded this institution, ordered every scroll on ships to be confiscated so that they could be copied and put into this *bibliotheka*. For 10 points, name this ancient repository for scrolls and manuscripts which was located in a city in Egypt.

ANSWER: Royal Library of Alexandria [or Musaeum of Alexandria; prompt on the library] <Jose>

6. Cardinal Giulio Alberoni's plan to overthrow this non-French monarch was foiled by the wreck of the Duke of Ormond's fleet and by the Battle of Glen Shiel. As a means of allowing his subjects to curry favor, this monarch revived the Order of the Bath. This king's foreign minister Viscount Stanhope helped create the Quadruple Alliance to fight Spain. This monarch was challenged by the "Old Pretender" during the (*) first Jacobite uprising. The South Sea Bubble occurred during the reign of this monarch, who appointed Robert Walpole as prime minister. The Act of Settlement elevated this Elector of Hanover to the throne after the death of Queen Anne. For 10 points, name this man who was crowned King of Britain in 1714 and was followed by three kings who took his name.

ANSWER: George I [prompt on George] <Jose>

7. Michael Horn, the head of the American branch of this organization, quipped "I should probably go, huh?" before resigning in March of 2016. Its current head took his job after Martin Winterkorn was dismissed. A West Virginia University group found that one of this company's products entered a "low power" mode when put on a (*) stationary rig. Matthias Mueller sacked over half of this company's board after the CARB rejected a proposed fix to vehicles with 2.0L engines. So-called "defeat devices" in many of this company's products, such as the Passat and Jetta, altered them to emit less nitrous oxide and carbon dioxide when subjected to EPA testing. For 10 points, name this German car company that manufactures the Gold and Beetle.

ANSWER: Volkswagen AG [or VW] <Jose>

8. In preparation for these events, five crates of oranges and lemons arrive at their location every Friday. After leaving one of these events, two men crash into a ditch when the wheel of their car comes off. During one of these events, a character exclaims "this fella's a regular Belasco!" while examining books in a library; that character is nicknamed for his (*) owl-eyed spectacles. A cheating golf champion named Jordan Baker is told "amazing things" at one of these events. Music like "Jazz History of the World" plays at these events, which occur in a mansion that lies across the bay from a green dock light in West Egg. For 10 points, name these events attended by Nick Carraway and hosted by the title character of F. Scott Fitzgerald's *The Great Gatsby*.

ANSWER: Jay Gatsby's parties [or party scenes from *The Great Gatsby*] <Brownstein>

9. A temporary, elevated altar called the *vedi* bore this substance in *homa* rituals. A god of this substance rides in a chariot pulled by either two parrots, a goat, or a ram, and is the subject of the first hymn of the Rig Veda. Trays bearing this substance are rotated in a circle during *aarti*, and *yajna* rituals are performed using it. During the *saptapadi* ritual at Hindu weddings, the bride and groom take (*) seven steps around this substance together. An appalled Queen Victoria issued a ban on a practice involving this substance in 1861. Offerings of *ghee* are lapped up by seven tongues of this substance belonging to the Vedic god Agni, its personification. For 10 points, name this substance which consumed women who performed *sati* by jumping on a funeral pyre.

ANSWER: fire [or flames or equivalents; accept Agni before it is read] <Alston>

10. Scleronomic constraints do not explicitly depend on this quantity. An arbitrary function's overall change with respect to this quantity equals the function's Poisson bracket with the Hamiltonian plus its explicit change with respect to this quantity. It's not the action, but this quantity is minimized for a particle under the influence of gravity traveling on the surface of a cycloid. The product of resistance and capacitance for an (*) RC circuit equals a quantity denoted by tau, a "constant" named for this quantity which characterizes the circuit. For a system doing work at constant power, power times this quantity equals work. Acceleration equals the derivative of velocity with respect to this quantity. For 10 points, name this quantity whose SI unit is the second.

ANSWER: time [accept "time constant" before its mentioned] <Busse>

11. This leader developed the pseudo-scientific Sun Language Theory, which conveniently proposed that an ancestor of his country's language was actually the origin of all the world's languages. This man's country was allowed to regulate passage on a key body of water by the Montreux Convention. The Great Fire of Smyrna began after his troops recaptured the city, and he expelled over one million ethnic Greeks from his country the following year. As (*) president, he introduced a new Latin alphabet for his country's language and promoted the Six Arrows ideology, which enforced strict separation of church and state and banned the wearing of the fez. In 1920, he helped establish a new capital at Ankara. For 10 points, name this founder and first president of modern Turkey.

ANSWER: Mustafa Kemal Atatürk [accept either underlined name] <Wang>

12. This city's name became the nickname of a series of quartets by Georg Philipp Telemann because those quartets became popular here. A treatise that claimed to have found the "fundamental bass" of Western music, the *Treatise on Harmony*, was published in this city where, in the 1750s, a pamphlet war about the merits of two different countries' styles of music called the "War of the Buffoons" broke out. Mozart's *Symphony No. 31* is nicknamed for this city, which titles a (*) symphonic poem that features four taxi horns. A riot broke out at the premiere of *The Rite of Spring* in this national capital. George Gershwin wrote a tone poem about an "American in" this city. For 10 points, name this European capital whose conservatory taught Claude Debussy.

ANSWER: **Paris** <Alston>

13. Jacques Maritain pointed to this man's treatment of the existence-essence distinction as the germ of a type of existentialism. This man argued that the existence of contingent things requires the existence of a necessary being. In his major work of philosophy, this author usually uses the construction "Sed Contra," meaning "On the Contrary," followed by "Respondeo," meaning (*) "I Respond." This philosopher stopped writing after a mystical experience that led him to compare his thought to straw. This man's magnum opus included the *quinque viae*, or five proofs for the existence of God. A synthesis of the teachings of the Catholic Church with classical philosophy can be found in, for 10 points, what 13th century Dominican friar's *Summa Theologica*?

ANSWER: Thomas **Aquinas** [or Thomas of **Aquino**; prompt on Thomas] <Jose>

14. The pathogen that causes this disease secretes the antigens F1 and V and was co-discovered by Kitasato Shibasaburo. This disease's pathogen uses a type III secretion system to deliver its effectors called Yops. It is endemic to prairie dogs in the western US. The two other forms of this disease are septicemic and pneumonic. The bacterium that causes this disease, (*) *Yersinia pestis*, forms a biofilm in the esophagus of its animal vector. The best known form of this disease gets its name from sufferers' swollen lymph nodes on the armpits or groin, which is typically transmitted by insect bite. For 10 points, name this disease transmitted by the rat flea, which killed a third of Europe during the Middle Ages.

ANSWER: bubonic **plague** [or **Black Death**; or **septicemic plague**; or **pneumonic plague**; prompt on *Yersinia pestis*] <Silverman>

15. In the 1940s, this musician protested the war movement with the album *Songs for John Doe* and performed in many "hootenannies" as part of the Almanac Singers. After this musician was "discovered" by Alan Lomax, he recorded the songs on the album *Dust Bowl Ballads*. The 18 minute talking blues song "Alice's Restaurant Massacre" was recorded by his son Arlo. In his autobiography (*) *Bound for Glory*, this musician described his use of a guitar that had the phrase "this machine kills fascists" scrawled on it. A song written by this man describes the title location "From California to the New York island; / From the red wood forest to the Gulf Stream waters." For 10 points, name this American folk singer, who wrote "This Land is Your Land."

ANSWER: Woody **Guthrie** <Jose>

16. This two-word phrase was introduced in 1919 by Upton Sinclair, whose book *The Brass Check* uses it to describe the "petty underlings" of a certain kind of world. According to a 1951 book, people described by this phrase do not "live by making things;" instead they handle "paper and money and people." That book, which describes the "salesmanship mentality" among the "American Middle Classes," is by (*) C. Wright Mills and is named for this phrase. This hyphenated adjective was used by criminologist Edwin Sutherland to describe Ponzi schemes, blackmailing, forgery and other non-violent crimes. For 10 points, those who work in offices are often described by what term contrasted with blue-collar?

ANSWER: white-collar <Jose>

17. In this novel, a sleepwalker carries his wife across a river and lays her in a stone sarcophagus in the ruins of a Cistercian (sis-TUR-shan) abbey. This novel's protagonist describes the "blighted star" they live on to her brother Abraham just before accidentally killing their family horse Prince. At Talbothay's dairy, this novel's protagonist befriends the milkmaids Izz, Retty, and Marian, who all love a man who leaves (*) Wessex to explore farming options in Brazil. After a police chase concludes at Stonehenge, this novel ends with a gentleman farmer and his sister-in-law watching for the black flag that signals the execution of a woman who murders Alec, the father of her illegitimate baby Sorrow. For 10 points, name this Thomas Hardy novel about a woman who marries Angel Clare.

ANSWER: *Tess of the D'Urbervilles*: *A Pure Woman Faithfully Presented* <Mehigan>

18. This person came up with his most famous innovation on the way to a tutoring job offered by fellow Yale alum Phineas Miller. This man received funding from Nathanael Greene's widow, Catharine. Edwin Battison argued that a milling machine used in this man's New Haven factory was really the brainchild of Simeon North. This man supposedly met with President Adams and President-Elect Jefferson and wowed them by (*) assembling a musket from a drawer of shuffled pieces he had manufactured. He unsuccessfully demanded 40% of the revenue from material produced by his best known invention. A contract to produce \$134,000 worth of guns with his interchangeable parts system helped him pursue patent litigation against Southern farmers. For 10 points, name this inventor of the cotton gin.

ANSWER: Eli Whitney <Bentley>

19. The very strong CAG promoter contains the start of a gene encoding this protein in chickens. This 43-kilodalton protein and GAPDH are the most common loading controls for Western blots. This protein is stained red by phalloidin, and is regulated by the Rho GTPase family. Two critical concentrations of this protein determine if it polymerizes at the (*) barbed end, the pointed end, or both. At the cellular leading edge, it forms lamellipodia, and it can also bundle together to make stress fibers. A form this protein labelled F is formed by ATP hydrolysis and makes up a smaller component of the cytoskeleton than microtubules. For 10 points, name this protein found in microfilaments and separates myosin bands in sarcomeres.

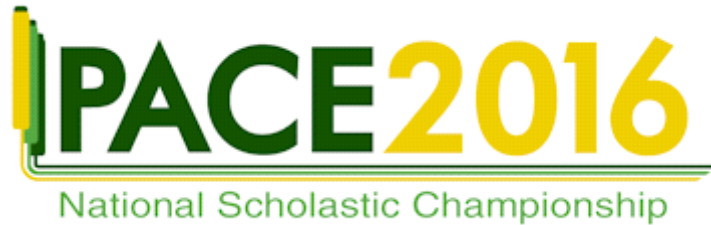
ANSWER: actin [or beta-actin; or F-actin; or G-actin; or filamentous actin; or globular actin] <Silverman>

20. The protagonist of this novel resorts to shooting nine angry challengers with his revolver after his rival strips him of his lasso. The protagonist of this novel repairs a well to cause water to flow again into the Valley of Holiness. The novel's hero's nostalgia for a telephone operator leads him to name his child Hello-Central, and he gets called "The Boss" after using explosives to cause a rival (*) magician's tower to crumble. Five hundred warriors on bicycles are dispatched by Clarence to save this novel's hero after he goes undercover as a commoner with the King. Its protagonist successfully predicts an eclipse after he wakes up in the custody of Sir Kay. For 10 points, name this Mark Twain novel in which Hank Morgan travels back in time to Camelot.

ANSWER: A **Connecticut Yankee in King Arthur's Court** <Bentley>

21. One of these animals learns of Avalon Coldmoon's marriage before getting drunk and drowning in a barrel of water. That one of these animals belongs to the amateur painter and teacher Mr. Sneaze. Though he's lost his memory, Satoru Nakata can communicate with these animals in Haruki Murakami's *Kafka on the Shore*, and one of these animals narrates a (*) Natsume Soseki novel. Another of these animals is unaffected by the pepper in the Duchess's kitchen and escapes being beheaded during a croquet game featuring live flamingos in a queen's garden. That one of these animals talks to the protagonist from a tree branch and can disappear except for its grin. For 10 points, identify these animals, whose literary manifestations include the Cheshire one in *Alice in Wonderland*.

ANSWER: **cats** [or **neko**; or *I Am a **Cat***; or Cheshire **Cat**] <Alston>



PACE NSC 2016 - Round 04 - Bonuses

1. This type of system can be modeled as a set of consumer decisions that each have probabilities over certain outcomes. For 10 points each:

[10] Name this type of system that also describes an often state-run form of gambling in which participants buy tickets that give them a small probability of winning a huge amount of money.

ANSWER: **lottery** [or **lotteries**; prompt on any specific type or brand of lottery; do not accept or prompt on "raffle"]

[10] Rational consumers who play lotteries try to maximize the expected value of this quantity, which can be described as the level of economic satisfaction gained from a bundle of goods based on the consumer's preferences.

ANSWER: expected **utility**

[10] This Hungarian-American polymath developed a form of expected utility theory with Oskar Morgenstern. He is also the namesake of a type of computer architecture.

ANSWER: John **von Neumann (NOY-mahn)** <Aggarwal>

2. This author's 1997 essay collection, *Afrodita*, contains many discussions of aphrodisiacs. For 10 points each:

[10] Name this novelist, who fictionalized her husband William Gordon as successful lawyer Gregory Reeves in her novel *The Infinite Plan*.

ANSWER: Isabel **Allende**

[10] Allende contrasts the cruelties of the patriarch Esteban Trueba with that of the political activist Alba in this novel that was partly inspired by the Chilean coup of 1973.

ANSWER: *The **House of the Spirits*** [or *La **casa de los espíritus***]

[10] Another of Allende's protagonists, Eva Luna, tells stories to survive and make a living and was partly inspired by this character from the *Arabian Nights*, who staves off her execution by continuously leaving cliffhangers in the nightly tales she tells her husband King Shahryar.

ANSWER: **Scheherazade** [or **Sheherazade**] <Jose>

3. A trip to the Netherlands inspired this artist's *Dutch Interiors* series. For 10 points each:

[10] Name this artist, whom Andre Breton called "probably the most Surrealist of us all." The hole in the stomach of the title figure of this artist's *Harlequin's Carnival* is a reference to the hunger-induced hallucinations which inspired the painting.

ANSWER: Joan **Miro** [or Joan **Miro** i Ferrà]

[10] Miro painted a dog barking at this object. This astronomical object, representing Islam, occupies the top-left corner of Albrecht Altdorfer's *The Battle of Issus*.

ANSWER: the **moon** [or a crescent **moon**]

[10] Miro's *The Tilled Field* includes a tree with one of these body parts on its trunk. An 1889 self-portrait by another artist shows him wearing a fur hat with a bandage over this body part.

ANSWER: an **ear** <Bentley>

4. Gillen D'Arcy Wood argued that the eruption of this volcano contributed to the debts that plagued Thomas Jefferson late in his life. For 10 points each:

[10] Identify this volcano located on Sumbawa Island that erupted in 1815. This volcano's eruption caused "The Year without a Summer."

ANSWER: Mount **Tambora** [or Mount **Tamboro**]

[10] Drought and subsequent flooding in Bengal after the Tambora eruption gave rise to an especially virulent strain of this disease. John Snow deduced that water from the Broad Street pump was causing this disease during an 1854 outbreak in London.

ANSWER: **cholera**

[10] The eruption of this other volcano in 1883 caused global temperatures to drop by over 1 degree Celsius and caused brilliant red sunsets in Europe. Over thirty six thousand people died during the eruption of this volcano.

ANSWER: Mount **Krakatoa** [or **Krakatau**] <Bentley>

5. Answer some questions about unusual uses of nickel, for 10 points each.

[10] Nickel tanks are used to transport this element because it forms a passivation layer on the tank's inside lining. It is the most electronegative element of the periodic table.

ANSWER: **fluorine** [or **F**]

[10] Nickel-63 is used to detect molecules in this type of chromatography, which vaporizes the sample before separation. It is typically coupled with mass spectrometry.

ANSWER: **gas** chromatography [or **GC**]

[10] This nickel-dependent enzyme was crystallized by James Sumner to demonstrate that enzymatic function was performed by proteins. This enzyme hydrolyzes its namesake molecule into carbon dioxide and ammonia.

ANSWER: **urease** <Prieto>

6. Plato considered this play's brutal satire of Socrates to be a major factor behind the philosopher's trial and execution. For 10 points each:

[10] Name this play, in which Strepsiades and his slave Xanthias set fire to Socrates' Thinkery in revenge for his having taught sophistry to Strepsiades' son Pheidippides.

ANSWER: *The **Clouds*** [or ***Nephelai***]

[10] This other play by the author of *The Clouds* harshly satirizes the Athenian politician Cleon by depicting him competing with the sausage seller Agoracritus for the approval of Demos, or the people.

ANSWER: *The **Knights*** [or ***Hippeis***]

[10] This Greek "father of ancient comedy" wrote the *The Clouds* and *The Knights*, as well as *The Birds*.

ANSWER: **Aristophanes** <Alston>

7. A Prussian contingent of these troops named for Bayreuth proved decisive at the Battle of Hohenfriedberg in 1745. For 10 points each:

[10] Identify this type of French mounted infantry, named for the short-barreled firearm they carried. The practice of placing these troops in Huguenot homes has led their name to become an English verb.

ANSWER: **dragoons**

[10] This French king's dragonade policies helped drive many Huguenots from France. Later, this "Sun King" would issue the Edict of Fontainebleau, formally expelling Protestants from his country.

ANSWER: **Louis XIV** [or **Louis the Great**; or **Louis le Grand**; prompt on **Louis**]

[10] This king was the first of his countrymen to incorporate dragoons into his army. This king was killed fighting at the Battle of Lutzen in 1632.

ANSWER: **Gustavus Adolphus** [or **Gustav II** Adolph or **Gustavus Adolphus** the Great or **Gustavus Adolphus** Magnus; prompt on **Gustavus**] <Bentley>

8. For 10 points each, answer the following about the concept of time in a Persian religion:

[10] The death of the primeval cow Gavaevodata, as well as the prominence of Mohor, or the Moon, are commemorated on the days of the calendar of this dualistic religion, started by and named for a Persian prophet.

ANSWER: **Zoroastrianism** [or **Mazdaism**; or **Mazdayasna**; or **Magianism**]

[10] The *Book of Primordial Creation* or *Bundahishn* claims that Ahura Mazda and this evil god of Zoroastrianism fought each other for 3000 years, or a tri-millennium.

ANSWER: **Ahriman** [or **Angra Mainyu**]

[10] The present age will be transformed into a "glorious" age when this Zoroastrian savior comes and brings about the "final renovation" of the World.

ANSWER: **Saoshyant** <Jose>

9. This enclave is named for a legendary stonecutter from Rimini who fled during Diocletian's persecution of Christians. For 10 points each:

[10] Name this "most serene republic," which is situated between the Marche (**MAR-kay**) and Emilia-Romagna (**ay-MEEL-yah row-MON-yuh**) regions of Italy.

ANSWER: **San Marino**

[10] The capital of San Marino, which is also named San Marino, is largely built on Monte Titano, a mountain in this range that runs through most of Italy.

ANSWER: **Apennines** [or **Appennini**]

[10] The largest city in the Emilia-Romagna region that is north of San Marino is this one. This birthplace of Luigi Galvani is home to the oldest university in the world, which was founded in 1088.

ANSWER: **Bologna** [or **Bulaggna**] <Jose>

10. The Reynolds number is defined as the ratio of inertial forces to this other type of forces. For 10 points each:

[10] Name this quantity, which is a measure of a fluid's resistance to flowing. It is almost zero for superfluids, such as liquid helium.

ANSWER: **viscosity** [accept word forms such as **viscous**]

[10] This general class of fluids has a viscosity that is dependent on the shear rate. Examples of these materials includes thixotropic substances such as ketchup, as well as oobleck, a mixture of corn starch and water.

ANSWER: **non-Newtonian** fluid [do not accept or prompt on "Newtonian fluid"]

[10] Mayonnaise and mustard are this type of non-Newtonian fluid, which is similar to a Newtonian fluid in that the relationship between shearing stress and rate is linear, but this kind of substance will not flow until the yield stress is met.

ANSWER: **Bingham plastic** [prompt on plastic] <Jose>

11. For 10 points each, answer the following about the achievements of the Snohetta architectural group.

[10] Snohetta created a building of this kind in Oslo with slanted roofs that people can walk on. Charles Garnier designed a building of this type in Paris whose ceiling was painted by Marc Chagall. ANSWER: **opera** house [prompt on concert house or music hall or answers indicating it is place that music is played, but does not specifically mention operas.]

[10] Snohetta just finished expanding a museum that exhibits this kind of art in San Francisco. A museum named for this kind of art in New York City contains Van Gogh's *Starry Night* and is known as the MoMA (**MOH-muh**).

ANSWER: Museum of **Modern** Art

[10] The documentary *The Sand Castle* centers on a competition between Snohetta and this architect to design a new capital for Ras al-Khaima in the UAE. He also designed the Seattle Central Library.

ANSWER: Rem **Koolhaas** [or Remment Lucas **Koolhaas**] <Bentley>

12. Like elliptical geometry, this non-Euclidean geometry features triangles whose interior angles sum to greater than 180 degrees. For 10 points each:

[10] Name this kind of geometry, in which all lines meet at two antipodes.

ANSWER: **spherical** geometry

[10] The postulate named for this kind of line does not hold in non-Euclidean geometry. For a line q and a point p not on the line, only one line with this property with respect to q can be drawn through that point p according to the postulate.

ANSWER: **parallel** lines [accept **parallel** line postulate]

[10] In the spherical geometry, this familiar statement reduces down to the statement that "cosine of a equals the cosine of b times the cosine of c ." Similar to its Euclidean counterpart, it is a special case of the spherical law of cosines.

ANSWER: **Pythagorean** theorem <Jose>

13. This man's time as a prosecutor led him to write a book about organized crime called *The Enemy Within*. For 10 points each:

[10] Name this brother of an American president, under whom he served as attorney general.

ANSWER: **Robert Francis Kennedy** [prompt on Kennedy; accept **RFK**; accept **Bobby Kennedy**; do not accept or prompt on "JFK" or "John (F.) Kennedy"]

[10] This Palestinian national shot and killed RFK in 1968 because Kennedy had supported Israel during the Six-Day War.

ANSWER: Sirhan **Sirhan**

[10] This historian used the private papers of RFK to write the biography *Robert Kennedy and His Times*. He chronicled the short presidency of JFK in his Pulitzer Prize-winning *A Thousand Days*.

ANSWER: Arthur **Schlesinger** Jr. <Jose>

14. In *Politics as a Vocation*, Max Weber noted that this book exemplified "truly radical Machiavellianism" and that *The Prince* was harmless compared to this text. For 10 points each:
[10] Name this treatise written by Kautilya that argues a ruler's sole goal is to increase his own political power. It suggests implementing a system of spies and proposes different military regimens.
ANSWER: **Arthashastra**

[10] The *Arthashastra*'s policy of *lobhavijayin*, or conquest out of greed, inspired this founder of the Mauryan Empire to attack and annex almost all of the non-Tamil regions of India.

ANSWER: **Chandragupta** Maurya

[10] In the *Arthashastra*, Kautilya advocates a "four-limbed" army composed of infantry, cavalry, chariots and these animals, which were also used by Hannibal to cross the Alps.

ANSWER: war **elephants** <Jose>

15. This phrase titles Dan Tapscott's book about the "New Promise of Information Technology." For 10 points each:

[10] Name this phrase popularized in *The Structure of Scientific Revolutions* to denote events in which the basic facts and assumptions of a discipline are radically altered.

ANSWER: **paradigm shifts**

[10] As an example of a paradigm shift, Thomas Kuhn discusses this Polish astronomer's model of the heliocentric universe, which he presented in *On the Revolutions of the Heavenly Spheres*.

ANSWER: Nicolaus **Copernicus** [or Mikolaj **Kopernik**]

[10] This American founder of pragmatism discussed the merits of the scientific method in his article "The Fixation of Belief." *Popular Science Monthly* also published his article "How to Make Our Ideas Clear."

ANSWER: Charles Sanders **Pierce** <Jose>

16. This poem ends by asking if the title woman "put on his knowledge with his power before the indifferent beak could let her drop?" For 10 points each:

[10] Identify this sonnet, whose speaker evokes the images of "The broken wall, the burning roof and tower, and Agamemnon dead".

ANSWER: **"Leda and the Swan"**

[10] "Leda and the Swan" was written by this Irish poet of "Sailing to Byzantium" and "Easter 1916".

ANSWER: William Butler **Yeats**

[10] In Yeats's poem "The Second Coming," the speaker concludes by wondering "what rough beast slouches towards [this city] to be born." A novel by Peter De Vries draws its title from the line but switches this city with Kalamazoo.

ANSWER: **Bethlehem** <Bentley>

17. This god, who rides a four-tusked elephant named Airavata had a hall in Svarga, where the righteous dead lived before they were reincarnated. For 10 points each:

[10] Name this Vedic storm god who wielded a thunderbolt called the *vajra*.

ANSWER: **Indra**

[10] Indra was the father of this hero of the *Mahabharata*, the third of the Pandava brothers. A conversation between this warrior and his charioteer Krishna makes up the *Bhagavad Gita*.

ANSWER: **Arjuna** [or **Arjun**]

[10] In the *Mahabharata*, Indra took the form of a bee to sting this king of Anga, because this man was the only warrior believed to be able to defeat Arjuna. Indra also tricks him into giving away the armor that made him invincible.

ANSWER: **Karna** [or **Vaikarathana**] <Jose>

18. In one novel, this character works as a Linotype operator in Brewer and receives a phone call from Skeeter telling him that his house is on fire. For 10 points each:

[10] Identify this former high school basketball star who is "Rich" and "at Rest" in a series of novels about him.

ANSWER: **Rabbit** [or **Harry** Angstrom; or Harry **Angstrom**]

[10] The Rabbit novels were written by this man. Dale attempts to write a computer program to prove God's existence in this author's novel *Roger's Version*, and he also wrote *The Witches of Eastwick*.

ANSWER: John **Updike** [or John Hoyer **Updike**]

[10] In *Rabbit At Rest*, Rabbit has largely retired from owning one of these businesses. In that novel, Rabbit's son Nelson embezzles from one of these businesses in order to fuel his cocaine addiction.

ANSWER: **car** dealership [or **auto** dealership; or **Toyota** dealership] <Bentley>

19. This composer's collection *L'estro armonico* comprises twelve concertos, each written for one, two, or four solo violins. For 10 points each:

[10] Name this composer of *The Contest Between Harmony and Invention*.

ANSWER: Antonio **Vivaldi** [or Antonio Lucio **Vivaldi**]

[10] The divisions of the year title these first four pieces in Vivaldi's *The Contest Between Harmony and Invention*.

ANSWER: *The **Four Seasons*** [or *Le **quattro stagioni***]

[10] An imitative "Et in terra pax" is the second movement of Vivaldi's D major setting of this second section of the mass, which sits between the Kyrie and the Credo.

ANSWER: **Gloria** [or **Gloria in excelsis Deo**] <Kim>

20. This type of mutation is useful for mapping evolutionary history in a molecular clock. For 10 points each:

[10] Name this type of mutation which is defined to have neither a positive nor a negative impact on a species' fitness.

ANSWER: **neutral** mutation

[10] Neutral theory proposes that most genetic variation is caused by this phenomenon, the change in allele frequencies due to random apportionment of alleles in a finite population. The founder and bottleneck effects are examples of it.

ANSWER: **genetic drift** [or **allelic drift**]

[10] In a finite population, genetic drift eventually leads to this phenomenon, in which an allele achieves 100% frequency. The number of generations it takes for this event to occur equals four times the population size, assuming a large population.

ANSWER: allele **fixation** [or word forms] <Jose>

21. Karl Popper advocated a "critical" belief denoted by this term, according to which tests of theories serve to falsify rather than justify. For 10 points each:

[10] Name this term that also denotes a broad position, advocated by Nicolas Malebranche and Baruch Spinoza, which holds that the chief source of learning in humans is through reasoning and not sense experience.

ANSWER: **rationalism** [accept word forms]

[10] Rationalism is a position within the field of epistemology, which is concerned with the study of this topic. A maxim attributed to Francis Bacon states that this "is power."

ANSWER: **knowledge**

[10] In contrast to rationalism, the empiricist John Locke suggested that the mind at birth was one of these things in *An Essay Concerning Human Understanding*.

ANSWER: **blank slate** [or **tabula rasa**] <Jose>