

## ACF Fall 2015

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### Tossups

1. A politician with this surname was assassinated while walking to an interview with Peter Ustinov. Another politician with this surname may have received kickbacks from the Bofors arms company and was killed by a woman hiding a bomb under her dress. A politician with this surname instituted forced sterilization and removed civil liberties during a period dubbed "The Emergency." After ordering Operation Blue Star, that politician with this surname was assassinated by her Sikh bodyguards. For 10 points, give this common last name of Indian Prime Ministers Rajiv and Indira which was also the last name of the Mahatma.  
ANSWER: Gandhi [or Rajiv Gandhi; or Indira Gandhi]
2. Henry Cowles pioneered the study of ecological succession on structures made of this substance. Unlike regs and hamadas, ergs are covered with this material. Large fields of this substance mixed with clay and bitumen are located in Athabasca, Canada. This term describes particles that are larger in diameter than silts and clay but smaller than gravel. In many regions, this substance is primarily composed of silicon dioxide. Marram grass helps stabilize coastal hills of this material that have accumulated from winds blowing it onshore. For 10 points, name this material that forms dunes and is abundant in the Sahara desert.  
ANSWER: sand particles [prompt on "soil"; prompt on "silicon dioxide" or "silica" until "silicon" is mentioned]
3. This author wrote a novel in which a man who criticizes Ovid and John Gay sings a ballad about "Edwin and Angelina". In that novel, a man is sent to debt prison after his house burns down. This author wrote a play in which Constance Neville fails to steal her mother's jewels and elope with George Hastings, whose friend is tricked into thinking Liberty Hall is an inn. In a novel by this author, Mr. Burchell reveals himself as the uncle of Squire Thornhill. This author wrote a play in which Kate Hardcastle wins over Charles Marlow by dressing as a barmaid. For 10 points, name this Irish author of *The Vicar of Wakefield* and *She Stoops to Conquer*.  
ANSWER: Oliver Goldsmith
4. An uprising in this country was caused by the assassination of Avni Rustemi. A leader of this country was overthrown in the June Revolution by the founder of this country's Orthodox Church, Fan Noli. Another ruler of this country controlled the Sigurimi secret police. That ruler helped make this country the first to withdraw from the Warsaw Pact and declared this non-USSR country to be "the world's first atheist state". During World War II, this nation's King Zog was overthrown with the assistance of Fascist Italy. For 10 points, name this Balkan nation which was ruled by Enver Hoxha ["HO-sha"] during the Cold War from its capital at Tirana.  
ANSWER: Albania [or Shqipëria]

5. In the *Popol Vuh*, the head of One Hunahpu is turned into a calabash and placed on one of these objects, from which it spits into a maiden's hand. Sigmund pulls the sword Gram out of one of these objects named Barnstokkr ["barn-stoker"]. An eagle perched atop one of these objects has arguments with the serpent Nidhogg via the squirrel Ratatosk. In American folklore, these objects are destroyed by the companion of Babe the Blue Ox. In Norse mythology, the nine worlds are linked by an enormous one of this object named Yggdrasil ["IG-druh-sil"]. For 10 points, name these objects which Paul Bunyan chops down in his role as a lumberjack.

ANSWER: tree [or olive tree; or ash tree; or World Tree; or Yggdrasil; do not accept "wood"]

6. This opera's second act opens with a "March of the Priests" popular as a wedding piece. Its protagonist is blessed in the aria "O Isis und Osiris" before being put through a trial by silence. Upon reuniting with his love, a baritone in this opera is reduced to stuttering "Pa, pa, pa." That character earlier sings "Der Vogelfänger ["FOH-gull-feng-er"] bin ich ja" as he introduces himself as the birdcatcher Papageno. The murder of the sorcerer Sarastro is ordered in its colo-ra-tura aria "Der Hölle Rache" ["HUH-luh RAH-kuh"], sung by the Queen of the Night to her daughter Pamina, who is in love with Tamino. For 10 points, name this Mozart opera about the title instrument.

ANSWER: *The Magic Flute* [or *Die Zauberflöte*]

7. A text by this philosopher asks whether a certain mental state is "a merit or a defect" then discusses how it is borne out of defiance of forgiveness or our fear of not being forgiven. That book by this philosopher opens by claiming that the self is "a relation which relates itself to itself" before claiming that "despair is sin." Part of a book by this philosopher traces the courting of Cordelia, reflecting this philosopher's relationship with Regine Olsen. That text by an aesthete is paired with admonitory letters by "the Judge" and is called "The Seducer's Diary". For 10 points, name this Danish existentialist who wrote *The Sickness unto Death* and *Either/Or*.

ANSWER: Soren Aabye Kierkegaard

8. After this character's death, two characters walk off to get a drink, prompting the question "now what the hell ya suppose is eatin' them two guys?" This character often expresses a desire to "live off the fatta the lan'." His manner of death is foreshadowed by the shooting of Candy's old, blind dog. He accidentally kills a puppy by breaking its neck while trying to stroke it. After he kills Curley's wife, this character is shot in the back of the head by his best friend while he imagines a rabbit farm. For 10 points, name this mentally disabled farm worker who is mercy-killed by his friend George at the end of John Steinbeck's *Of Mice and Men*.

ANSWER: Lennie Small [accept either underlined portion]

9. This constant times two is in the denominator of the expression for the magnetic flux quantum. This quantity squared is in the numerator of the expression for the fine structure constant. This value was incorrectly estimated in an experiment due to an error in the value for the viscosity of air; in that experiment, particles were suspended in the air using an E-field. This quantity, which is equal to Faraday's constant divided by Avogadro's number, was calculated in Robert Millikan's oil drop experiment. For 10 points, name this quantity equal to approximately "1.60 times 10 to the negative 19" coulombs which is the charge of a proton.

ANSWER: elementary charge [or fundamental charge; or charge of an electron; or charge of a proton until "proton" is read]

10. The leader of the first of these events claimed to be a prophet and performed feats like breathing fire. That leader, whose forces were led by the general Cleon, was Eunus ["YOU-nus"]. In an attempt to quell one of these events, a commander revived the use of decimation as a punishment for his army. During one of these conflicts, an army escaped by rappelling down the side of Vesuvius before being annihilated at the Battle of the Siler ["SEE-ler"]. Participants in the last of these events were crucified along the Appian Way after being suppressed by Crassus. A side in the third of these wars was led by Spartacus. For 10 points, identify these rebellions of unfree people against the Roman Republic.

ANSWER: Servile Wars [or Roman slave rebellions; or obvious equivalents]

11. This artist showed Samson drinking from a donkey's jawbone in a painting in which only the feet of a shrouded man are visible. Another of his paintings shows two peasant kneeling in prayer to a barefoot Mary who is on a step holding Jesus. This artist of *The Seven Works of Mercy* and the *Loreto Madonna* depicted an orange-robed man at a desk being approached by an angel in a painting made for the Contarelli Chapel. In another painting by this artist, a beam of light from the top right illuminates a man at whom Jesus is pointing. For 10 points name this murderous painter of *The Calling of Saint Matthew*.

ANSWER: Caravaggio [or Michelangelo Merisi da Caravaggio]

12. This country's economic strategy for foreign direct investment is called the "Go Out" policy. Bill Clinton convinced Congress to grant this country permanent normal trade relations. This country's currency was devalued by 1.9% in August 2015 to stabilize a slowing economy. The eBay clone Taobao is operated by this country's Alibaba group. In 2011, this country overtook Japan to become the world's second largest economy. This country, whose currency is the renminbi, owns a plurality of the United States' national debt. For 10 points, name this country whose central bank PBOC manages the yuan.

ANSWER: People's Republic of China [or Zhongguo; or Zhonghua Renmin Gongheguo; do not accept "Republic of China"]

13. This compound is used to turn aromatic amino acids yellow in the xantho-proteic test. A mixture of this compound and sulfuric acid adds a strong, three-atom, deactivating group to benzene which can then be reduced to aniline. When highly concentrated, this substance is referred to as "white fuming". This substance is produced industrially in a process that uses a platinum-rhodium catalyst and reacts oxygen with ammonia. This product of the Ostwald process is mixed in a one to three ratio with hydrochloric acid to make the gold dissolving *aqua regia*. For 10 points name this strong acid with formula  $\text{HNO}_3$  ["H-N-O-three"].

ANSWER: nitric acid [accept  $\text{HNO}_3$  before mentioned]

14. A street in this city that divided its poor and rich sections was nicknamed "the Slot." Amadeo Giannini's Bank of Italy, which grew into the Bank of America, was founded in this city. Mayor Eugene Schmitz, the puppet of Union Labor Party boss Abe Ruef, created the Committee of Fifty to respond to a disaster in this city. This city exhibited its recovery from that disaster by hosting the extravagant 1915 Panama-Pacific International Exposition. A fire in this city destroyed many opulent Nob Hill mansions. Around 80% of this city was destroyed in a fire that started after its 1906 earthquake. For 10 points, name this city that is the southern terminus of the Golden Gate Bridge.

ANSWER: San Francisco, California

15. In this poem, an old vulture vainly tries to save a woman who is lured out of a protective boundary by an ascetic. A character in this poem uproots and brings an entire mountain to a wounded warrior in need of a healing herb. In this poem, a pair of sandals are placed on a throne to symbolize the true king, who has been exiled for fourteen years alongside his brother Lakshmana. This poem features the monkey god Hanuman, who infiltrates the demon Ravana's island fortress in search of Sita, the protagonist's abducted wife. For 10 points, name this Sanskrit epic poem about the title avatar of Vishnu.

ANSWER: Ramayana [or Ramayan; or Ramayanam]

16. Bowling league participation is cited as evidence for America's decline in the "social" form of this concept in a Robert Putnam book. Gary Becker wrote a seminal text on the "human" form of this concept, which can be enhanced by education or job training. A book studying trends in income inequality written by Thomas Piketty is titled for this term "*in the 21<sup>st</sup> Century*". Another book titled for this concept introduces the "labor theory of value", and later entries in that book were arranged by Friedrich Engels. For 10 points, name this term that titles a book by Karl Marx and refers to productive assets owned by a person or company.

ANSWER: capital [or social capital; or human capital; or *Das Kapital*]

17. This country's Chumbi-vilcas region celebrates a holiday that takes place on December 25th and is called Takanakuy. The message "Time for change! The future is renewable" was controversially displayed on a national monument in this country. A lake on this country's eastern border is home to the Uru people, who live on artificial islands made of reeds. Lake Titicaca lies on this country's border with Bolivia. Greenpeace activists left footprints in the ground and damaged this country's Nazca Lines. For 10 points, name this South American country whose capital is Lima.

ANSWER: Peru

18. This value can be measured invasively using an a-line and is commonly regulated with thiazides and ACE ["ace"] inhibitors. ANP ["A-N-P"] modulates this quantity by preventing sodium reabsorption and inhibiting renin. Angiotensin II increases water retention and causes vasoconstriction in order to increase this quantity. This quantity can be measured using a device with an inflatable cuff worn on the arm and listening for two sounds corresponding to its systolic and diastolic forms. For 10 points, name this quantity that is elevated in hypertension which for a typical resting adult is around 120-over-80 millimeters of mercury.

ANSWER: blood pressure [or systolic blood pressure; or diastolic blood pressure]

19. A flute solo begins the third variation in the theme-and-variations fourth movement of this composer's Symphony No. 8 in G major. The viola introduces the penta-tonic opening theme of this composer's String Quartet No. 12 in F major. This composer paid tribute to his deceased sister-in-law in his Cello Concerto in B minor. Folk dances such as furiantas, dumkas, and polkas comprise his *Slavonic Dances*. An English horn solo introduces the opening theme of the Largo second movement of this composer's Symphony No. 9, whose Native American and African-American influences stem from this composer's visit to the United States. For 10 points, name this composer of the *New World* Symphony.

ANSWER: Antonin Dvorak

20. The revelation that wisdom has been hidden from man is made in this book. In this book, God asks “Where were you when I laid the foundations of this earth?” to a character who is accompanied by his friends Eliphaz, Bildad, and Zophar. This work’s 41st chapter contains a long description of the sea monster Leviathan. The title character of this work is encouraged to curse God by his wife after he is stricken with boils, but he refuses. The prologue of this work describes a wager between God and Satan over the loyalty of the title character. For 10 points, identify this Old Testament book about the ever-pious title character.

ANSWER: Book of **Job**

#### **Extra**

This novel’s narrator observes that “there are more things to admire in men than to despise” after revealing his identity at the novel’s end. In this novel, an audience watching Gluck’s *Orfeo ed Euridice* panics after the lead singers collapse. In this novel, a man who lures cats to his balcony so that he can spit on them is the neighbor of Tarrou. The journalist Raymond Rambert struggles to escape the setting of this novel to return to his wife in Paris. In this novel, two sermons are delivered by Father Paneloux. For 10 points, name this novel set in the Algerian city of Oran, in which Dr. Bernard Rieux combats the title ailment, written by Albert Camus.

ANSWER: *The **Plague*** [or *La **Peste***]

## Bonuses

1. These two nations were joined together in the 1706 Acts of Union. For 10 points each:  
[10] Identify these two nations which were both ruled at the time by the House of Stuart. Their union formed the Kingdom of Great Britain.  
ANSWER: England and Scotland [require both, but in either order]  
[10] The Acts of Union were signed during the reign of this monarch who had a tumultuous relationship with the Duke and Duchess of Marlborough. The American theater of the War of the Spanish Succession is named after her.  
ANSWER: Queen Anne  
[10] This earlier act named Sophia of Hanover as the heiress to the English and Irish thrones, since all of the other Stuarts were Catholic. It allowed George I to take the throne after Anne's death.  
ANSWER: Act of Settlement, 1701
2. Phenols are hydroxy-derivatives of this molecule. For 10 points each:  
[10] Name this simplest aromatic compound, with formula  $C_6H_6$  ["C-six, H-six"].  
ANSWER: benzene  
[10] A dream of a snake eating its tail allegedly inspired this German chemist to propose the ring structure of benzene.  
ANSWER: Friedrich August Kekulé  
[10] Albert Ladenburg proposed that benzene had this structure, which resembles two cyclopropane rings.  
ANSWER: prismane
3. The time six-minutes to three is displayed on a clock in this artist's *The Enigma of The Hour*. For 10 points each:  
[10] Identify this Italian painter of *The Disquieting Muses*. Another work by this artist shows a girl rolling a hoop past a building behind which a menacing shadow lurks and is called *Melancholy and Mystery of a Street*.  
ANSWER: Giorgio de Chirico  
[10] de Chirico was the major figure of this movement that he co-founded with Carlo Carra. This style revolved around depictions of piazzas common to Italian towns made to feel eerie by absence of expected figures.  
ANSWER: metaphysical art [or *pittura metafisica*]  
[10] de Chirico's metaphysical art would later be a major influence on this movement whose painters included Max Ernst and Salvador Dali.  
ANSWER: surrealism [or word forms like surrealist]

4. This hero withdraws from fighting in the Trojan War when his war prize, the princess Briseis, is seized by Agamemnon. For 10 points each:

[10] Name this Greek warrior who is later killed by an arrow to his only vulnerable point, the heel.

ANSWER: Achilles

[10] Agamemnon vainly tries to convince Achilles to rejoin the war by sending an embassy comprising Odysseus, Phoenix, and this warrior who fights alongside his brother, the archer Teucer.

ANSWER: Ajax the Greater [or Telamonian Ajax; or obvious equivalents that suggest the Ajax of more significance; or Aias in place of Ajax; prompt on "Ajax" alone; do not accept "Ajax the Lesser"]

[10] Achilles ultimately decides to return to combat to avenge his best friend Patroclus, who is killed while dressed in this manner.

ANSWER: he is wearing the armor of Achilles [or he is disguised as Achilles; or obvious equivalents]

5. A Jewish prayer service features the "hatzi" variety of this prayer to delineate a new section of the service. For 10 points each:

[10] Identify this prayer. Its best known form is a "mourner's" variety recited to commemorate either the recently deceased or the anniversary of a death.

ANSWER: Kaddish

[10] Like many Jewish prayers, reciting the Kaddish requires a minyan, which is a quorum of this many Jews gathered together. It is also the number of Commandments God gave to Moses on Mt. Sinai.

ANSWER: ten

[10] This word, which translates as "time of the year", is used to mark the anniversary of a loved one's death. It is observed with three sayings of the mourner's Kaddish and the lighting of a commemorative candle.

ANSWER: Yahrzeit

6. The RSA encryption scheme relies on the difficulty of factoring the product of two large numbers of this type. For 10 points each:

[10] Identify these non-composite numbers, the only even one of which is 2.

ANSWER: prime numbers

[10] This statement claims that every even integer greater than 2 can be expressed as the sum of 2 primes. Its "weak" form was proved in 2013, but it otherwise remains unsolved.

ANSWER: Goldbach's conjecture

[10] In 2013, this mathematician proved that there are an infinite amount of primes with a gap of less than 70 million between them. His proof has resulted in increased interest in the still-unproven twin prime conjecture.

ANSWER: Yitang "Tom" Zhang

7. A *30 for 30* documentary contrasts this man's life with that of a soccer player with the same last name who was gunned down after scoring an own goal. For 10 points each:  
[10] Name this former boss of the Medellin Cartel who was the best-known trafficker of cocaine until his 1993 death.  
ANSWER: Pablo Escobar [or Pablo Emilio Escobar Gaviria]  
[10] Escobar's Medellin Cartel was based in this South American nation. Its "La Violencia" period began with a riot in its capital city, Bogotá.  
ANSWER: Colombia [or Republic of Colombia]  
[10] The soccer player Escobar was gunned down outside one of these buildings in Medellin. One of these buildings frequented by American soldiers in Berlin was bombed by an apparent Libyan conspiracy.  
ANSWER: nightclub [or bar; or discotheque; or obvious equivalents]
8. This composer's String Quartet No. 1 is an autobiographical piece subtitled "From My Life." For 10 points each:  
[10] Name this composer who depicted the title river in *Vltava* ["vul-TA-va"], which is the second tone poem in the six-piece cycle *Ma vlast*.  
ANSWER: Bedřich Smetana  
[10] Bedřich Smetana wrote *Ma vlast* while suffering from this condition, which afflicted Ludwig van Beethoven towards the latter half of his life.  
ANSWER: deafness [or loss of hearing; or obvious equivalents]  
[10] One of Smetana's earliest pieces was a three-movement piece of this type in G minor inspired by the death of his eldest daughter. Beethoven used the key of B-flat major for one of these pieces nicknamed "Archduke."  
ANSWER: piano trio [prompt on "trio"]
9. The Atbara and Sobat are tributaries of this river. For 10 points each:  
[10] Name this river which has "Blue" and "White" streams. It is the longest in Africa.  
ANSWER: Nile River  
[10] Historically, Egyptians arranged their agricultural calendar around the flooding of the Nile. However, after the construction of this dam in the 20th century, Nile flooding could be monitored and controlled.  
ANSWER: Aswan Dam [or Aswan Low Dam; or Aswan High Dam]  
[10] This lake in Ethiopia is the source of the Blue Nile. It is fed by the Reb and Gumara rivers.  
ANSWER: Lake Tana
10. Conrad, the son of this novel's protagonist, dies right before his wedding when a gigantic helmet crushes him. For 10 points each:  
[10] Name this novel by Horace Walpole about Manfred's attempts to produce a strong male heir for his family.  
ANSWER: *The Castle of Otranto*  
[10] *The Castle of Otranto* kicked off this literary horror genre whose name refers to the architecture of the castles they were often set in.  
ANSWER: Gothic fiction [or Gothic horror]  
[10] This author described Harker and van Helsing's efforts to kill the title creature in the 1897 novel *Dracula*.  
ANSWER: Bram Stoker [or Abraham Stoker]



11. Answer the following about spicy food, for 10 points each.

[10] This delicious and trendy Southeast Asian red chili paste is best known in the United States through a version produced by Huy Fong Foods, which puts a picture of a rooster on its bottles.

ANSWER: Sriracha sauce

[10] These spicy peppers, which are green when ripe, are smoked to create chipotles. They are wrapped in bacon and stuffed with cheese to make their namesake “poppers.”

ANSWER: jalapeño peppers

[10] The spice of peppers is measured on this scale, named after an American pharmacist. The ghost pepper is measured at around 1,000,000 on this scale, while the bell pepper manages a measly 0.

ANSWER: Scoville scale

12. This government was overthrown by Napoleon Bonaparte in the coup of 18 Brumaire. For 10 points each:

[10] Identify this French government that lasted from 1795 to 1799. Its finances were drained by the War of the First Coalition.

ANSWER: French Directory [or Directoire exécutif]

[10] This man was the only leader of the board of five Directors. He earlier helped overthrow Robespierre during the Thermidorian Reaction.

ANSWER: Paul Barras

[10] The Directory waged the largely ineffective Quasi-War with this other nation. Earlier, Talleyrand had demanded a huge bribe from ambassadors of this nation in the XYZ Affair.

ANSWER: the USA [or United States of America; or America]

13. RuBisCo carboxylates RuBP [“rue-B-P”] to yield 3-phospho-glycerate to begin this pathway. For 10 points each:

[10] Give this name for the light-independent reactions of photosynthesis.

ANSWER: Calvin cycle [or Calvin-Benson-Bassham cycle]

[10] This form of carbon fixation occurs in maize, sugarcane, and other organisms containing bundle-sheath. It is named for the number of carbon atoms in malate and oxaloacetate.

ANSWER: C-4 carbon fixation

[10] C-4 carbon fixation is advantageous since it minimizes the occurrence of this process in which RuBisCO binds to oxygen instead of carbon dioxide.

ANSWER: photo-respiration

14. The *Enuma Elish* details the dedication of the Esagila temple to this god, and ends with a record of his fifty names. For 10 points each:

[10] Name this god who fashions the world using the corpse of the primordial dragon Tiamat.

ANSWER: Marduk [or Bel; or Bel Marduk]

[10] Marduk was the patron god of this city. The namesake Hanging Gardens of this city were legendarily built to appease a homesick queen.

ANSWER: Babylon [or Hanging Gardens of Babylon]

[10] Marduk’s father is this fertility god who, in a drunken stupor, mistakenly gives Inanna some divine documents called *me* [“may”].

ANSWER: Ea [or Enki]

15. This book's preface opens with a quotation from Plato's *Sophist* stating that "We... have now become perplexed" about the book's first title concept. For 10 points each:
- [10] Name this philosophical text that introduced the concept of *Dasein*, a German word that means "existence" in common usage.
- ANSWER: *Being and Time* [or *Sein und Zeit*]
- [10] Martin Heidegger, the author of *Being and Time*, shared many beliefs with this 20<sup>th</sup> century political party, which is why the 2014 publication of his anti-Semitic black notebooks caused renewed controversy.
- ANSWER: Nazi Party [or National Socialist German Worker's Party]
- [10] Heidegger wrote an essay claiming that *Gestell*, or "enframing", is the essence of this title subject, which consists of "equipment, tools, and machines...and the needs and ends that they serve".
- ANSWER: technology [or The Question Concerning Technology; or Die Frage nach der Technik]
16. Answer the following about the topsy-turvy world of Gilded Age American politics, for 10 points each.
- [10] This Democrat and former governor of New York reclaimed the presidency in 1892 after losing to Benjamin Harrison in 1888, becoming the only president to serve two non-consecutive terms.
- ANSWER: Grover Cleveland [or Stephen Grover Cleveland]
- [10] Cleveland won the contentious 1884 presidential election over this Republican, nicknamed "the Continental Liar from the State of Maine." He led the Half-Breed faction against Roscoe Conkling's Stalwarts.
- ANSWER: James G. Blaine [or James Gillespie Blaine]
- [10] In the 1884 election, Blaine's supporters used this rhyming chant to allege that Cleveland had an illegitimate child with Maria Halpin. It was often accompanied by an illustration of a crying baby yelling at Cleveland.
- ANSWER: "Ma, ma, where's my pa?" [or "Ma, ma, where's my pa? Gone to the White House ha ha ha"]
17. The Basilica of San Vitale in Ravenna contains donor portraits of Justinian I and Theodora in this medium. For 10 points each:
- [10] Name this medium in which small pieces of stone, tile, or glass are arranged to form a picture or pattern.
- ANSWER: mosaic
- [10] The *Alexander Mosaic*, which depicts the Battle of Issus with Darius III, was discovered in this well-preserved ancient residence named for a bronze statue of a goat-like figure.
- ANSWER: the House of the Faun [or Casa del Fauno]
- [10] The House of the Faun is found in this city where the House of the Vettii is also located. It was excavated in part by Giuseppe Fiorelli.
- ANSWER: Pompeii
18. Name some short stories by Franz Kafka, for 10 points each.
- [10] Gregor Samsa finds himself transformed into an enormous insect in this short story, and eventually dies after his father throws an apple at him.
- ANSWER: "The Metamorphosis" [or "Die Verwandlung"]
- [10] A torture machine in this short story has parts called the "Bed", "Designer", and "Harrow". The caretaker dies while having the machine inscribe "BE JUST" into his back in this story.
- ANSWER: "In the Penal Colony" [or "In the Penal Settlement"; or "In der Strafkolonie"]
- [10] The title character of this short story rides two horses which magically appear in his pig sty. While doing so, though, he abandons his servant girl Rosa to the groom of those horses.
- ANSWER: "A Country Doctor" [or "Ein Landarzt"]

19. The Ehrenfest paradox states a disk undergoing this sort of motion at relativistic speeds should appear to both contract and not contract. For 10 points each:

[10] Name this kind of motion which is described by the group  $SO(3)$  ["S-O-three"].

ANSWER: rotation [or obvious equivalents like spinning]

[10] When a system has a rotationally symmetric Lagrangian, Noether's theorem states that this quantity is conserved.

ANSWER: angular momentum [prompt on "momentum"]

[10] When dealing with the kinetics of rotation, this quantity is used as an analogue of mass. For a uniformly dense sphere it is equal to "two-fifths, times mass, times radius squared".

ANSWER: moment of inertia [prompt on "I"]

20. The title character of this story dies with "no hopeful verse" written on his tombstone. For 10 points each:

[10] Name this Nathaniel Hawthorne short story in which a young Puritan man ventures out into the New England woods, where he finds a coven of devil-worshipping witches that includes his wife, Faith.

ANSWER: "Young Goodman Brown"

[10] In "Young Goodman Brown," Faith wears pink versions of this item of clothing. Brown realizes that his wife is a member of the coven upon finding pieces of this clothing item on a tree branch.

ANSWER: pink ribbons

[10] Puritans abound in this Nathaniel Hawthorne novel about Hester Prynne, a woman who must wear the title letter on her chest to repent for having committed adultery.

ANSWER: *The Scarlet Letter*

### Extra

This daughter of Anne Boleyn is best known for overseeing the defeat of the Spanish Armada in 1588. For 10 points each:

[10] Name this "Virgin Queen" who ruled England in the late 16th century.

ANSWER: Elizabeth I [prompt on Elizabeth]

[10] Elizabeth was advised by this man, who served as Lord High Treasurer and helped Elizabeth seek an Anglican settlement. His son Robert also advised the queen.

ANSWER: William Cecil, 1st Baron Burghley [accept either underlined name]

[10] The 1569 Northern Rebellion sought to replace Elizabeth with this Catholic monarch from England's northern neighbor. She was executed for conspiring to overthrow Elizabeth in the Babington Plot.

ANSWER: Mary, Queen of Scots [or Mary I of Scotland; or Mary Stuart; prompt on Mary]