

ACF Nationals 2013

Packet by Alberta (Sinan Ulusoy, Igor Kasic, Fahim Rahman, Mitchell Schultze, Rishi Nair, Tyler Vandenberg, Shaheer Meenai, Trevor Davis) and Dartmouth (Nick Jensen, Cameron Orth)

### Tossups

1. While in a garden, this character fantasizes about wearing a “branched velvet gown” and playing with “some rich jewel.” He first appears in the fifth scene of Act One, where a woman claims that he is “sick of self-love” and “taste with a distempered appetite.” In *A Suitable Boy*, Kabir is disappointed to be cast as this character, whose final line exclaims “I’ll be revenged on the whole pack of you.” This character returns a ring by throwing it on the ground and asks, “Do you make an alehouse of my lady’s house?” to silence drunkards listening to a song about how “journeys end in lovers meeting.” He reads a fake love letter addressed to M, O, A, I that causes him to don cross-gartered yellow stockings, and is imprisoned in a pitch-black cellar as part of his gulling by Feste, Sir Andrew Aguecheek and Sir Toby Belch. For 10 points, name this puritanical steward of Olivia in *Twelfth Night*.

ANSWER: Malvolio

2. One work by this artist was inspired by Neapolitan peasants he saw dancing on his honeymoon and consists of an intricate array of brown-scale geometric figures. Another work by this artist features a contraption comprised of a phonograph linked to a piston with a mechanical arm, all of which is attached to a tuning fork. In addition to painting *Dances at the Spring* and *Amorous Procession*, he used a spark-plug with the word “FOR-EVER” on it to represent the title *Young American Girl in a State of Nudity*. He’s not Picasso, but he prominently depicted the bare shoulders of Gertrude Stein in a portrait. This artist created a painting with various geometric shapes inscribed in circles surrounding two blue gears which are labeled with the words femme and homme. Another creation of this artist derives its name from Stieglitz’s periodical 291. For 10 points, name this artist who produced *Machine Turn Quickly*, in addition to creating the dadaist *Journal 391*.

ANSWER: Francis-Marie Martinez de Picabia

3. This technique's output is commonly analyzed using a general linear model paired with a temporal convolution model, while its multiple comparisons issue is dealt with using continuous random field theory. This technique's spatial resolution is typically measured as about 10 voxels, while its temporal resolution is on the order of a few seconds. A study by McClure et al used this technique to look at how people react to Coke and Pepsi, while a number of marketing startups have tried to use it to understand how people respond to brands more generally. Facilitated by Seiji Ogawa's discovery that difference between oxygen-rich and oxygen poor blood could be detected using the so-called BOLD contrast, it relies upon the idea that blood flows to energize the active part of the brain. For 10 points, name this specific technique used in neuroscience that measures brain activity using large magnets.

ANSWER: functional Magnetic Resonance Imaging [prompt on MRI]

4. These events have been remarkably common in the evolution of the acropitrids, causing an unusual pattern in the Sankoff-Ferretti model that contrasts with the distribution found in most birds. The products of these events appear multicolored following FISH assays. “Alternate” and “Adjacent 1” patterns result from these events due to pseudolinkage. The rapid evolution of genes like the histone variant *CENP-A* mediates the loss of parity caused by a form of meiotic drive in which a type of these events occurs because of selection against ending up in a polar body. That form involves the fusion of the “q” arms of two acrocentric entities to form a metacentric one and is termed Robertsonian. The reciprocal type of these events involve the exchange of non-homologous material and includes the event that creates the Philadelphia chromosome. For 10 points, name these genetic aberrations involving part of one chromosome breaking off and attaching to another.

ANSWER: chromosomal translocations [accept specific types; prompt on chromosomal abnormality/aberration or equivalents; prompt on large-scale mutations/macromutations or equivalents]

5. Philip Perlman held this position under Harry Truman, becoming the first Jewish person to do so. It's not Ambassador to Great Britain, but this was the highest executive branch office held John Davis prior to his 1924 electoral loss to Calvin Coolidge. A former holder of this office was selected to investigate the death of Vince Foster and the Whitewater scandal and eventually issued a namesake 1988 report. This office was created in 1870, and its first holder was Benjamin Bristow. While holding this office, one man agreed to fire Archibald Cox during the Saturday Night Massacre. For 10 points, identify this office held by Robert Bork, Ken Starr, and Elena Kagan, which represents the United States government in front of the Supreme Court.

ANSWER: Solicitor General

6. Nikah Halala is a concept from Sharia law that limits the number of times one may participate in this ceremony. In Bengal, a man participating in this ceremony may wear a topor, a type of conical hat, while the Shinto equivalent of this ceremony involves a white scarf. Among the Hindus, this type of ceremony involves the Aupasana, a sacred fire that is divided into two parts. Joseph Smith preached that this ceremony could make the Lamanites – or Native Americans – a “white and delightsome people.” The Catholic Church requires those who wish to undergo this ceremony to go through a process called Pre-Cana. Among the Jews, this ceremony can be reversed with a get and involves writing a ketubah, or contract. For 10 points, name this ceremony whose Anglican rite calls for the phrase “I do.”

ANSWER: wedding [or marriage]

7. This work is subject to the Brasseur de Bourbourg ordering because known texts of it lack punctuation. Seminal vignettes in this work include the impregnating of the daughter of a local lord by a skull which spits into her hand; the creation of gods through a crop gathered by animals; and a heavy deluge of resin, which wipes out the first men, who lacked souls or minds. In another of its stories, a head is placed in a Calabash tree after the first heroes are executed for making noise to offend the Lords of Xibalbá by playing their ball game. For 10 points, name this book transcribed by Francisco Ximenez which relates the exploits of Hunahpú and Xbalanqué, the Maya Hero Twins.

ANSWER: Popol Vuh [or Popol Wuj]

8. These numbers can be defined using Leibniz's notation through the use of clouds, shadows, and monads. The transfer principle is used to define this set by requiring all first-order statements that hold for this field's more familiar subfield to hold for it. This field does not form a metric space, but does support an order topology. It is split into classes of equivalence of mutual approximations, each of which contains exactly one finite number. The map from this field to its more familiar subfield is called the standard part function. The standard parts of these numbers are arbitrarily close to a corresponding real number; they are thus used extensively in non-standard analysis. For 10 points, name this extension of the real numbers that include both infinite and infinitesimal numbers.

ANSWER: hyperreal numbers [accept \*R; prompt on R\*; accept surreal numbers, of which the hyperreals as defined are a subfield; prompt on differentials until “clouds”]

9. In the final act of this play, characters representing the hours of the night cross a platform at the rear of the stage and recite quotes from philosophers. It ends with a character claiming “the end of this play isn't written yet” as she begins to repeat its first scene. The stage manager Mr. Fitzpatrick interrupts the action of this play in order to admonish the actress Miss Somerset, who repeatedly breaks the fourth wall. The fortune teller Esmeralda appears in its second act, which is set on the boardwalk at Atlantic City and ends with a storm signal forecasting the end of the world. The maid Lily Sabina serves the central family of this play, whose first act features a talking dinosaur and mammoth, as well as the imminent approach of a giant wall of ice. For 10 points, name this play by Thornton Wilder in which the Antrobus family survive by the title expression.

ANSWER: *The Skin of Our Teeth*

10. This man moved his court to the city of Raqqa. This ruler sparked the rebellion of Rafi ibn al-Layth by appointing an unusually strict governor of Khorason, and it was en route to crush that rebellion that this ruler died. The historical account *Meadows of Gold* predominantly features this ruler. This ruler sent the albino elephant Abou al-Abbas to Charlemagne as a gift, and his death caused a civil war between his two sons. A scandal during this man's reign involved his sister becoming impregnated by Jafar, the son of the Grand Vizier Yahya, which led to the downfall of the powerful Barmakid family, and he is famous for patronizing the arts and sciences. For 10 points, name this powerful fifth caliph of the Abbasid dynasty.

ANSWER: Harun al-Rashid [or Harun ar-Rashid]

11. The reaction of these compounds with acetylene may proceed by a “trap-and-bite” mechanism rather than one involving a high-energy four-centered path. A modification that uses catalytic amounts of these compounds involves a one-percent solution of a bromide salt and forms them from similar compounds, which rarely react at negative seventy-eight degrees. These compounds only attack acyl halides once, producing ketones with the drawback of wasting one aryl or alkyl group, selection of which can be studied in mixed examples with a “dummy” group. These compounds selectively add 1,4 to an alpha, beta unsaturated ketone. These compounds are usually synthesized by reacting two equivalents of an organolithium reagent with a halide of the metal found in hemocyanin. For 10 points, name these organometallic reagents containing copper.

ANSWER: organocuprates [or Gilman reagents; accept lithium dialkyl cuprates; accept copper-containing organometallics or equivalents like lithium diorganocopper; prompt on organometallics; prompt on answers that just refer to cuprates or copper]

12. This composer's works inspired Richard Strauss's suite *Divertimento*. One of this composer's works includes a satire divided into five acts which mocks a guild of minstrels called the Menestrade. This composer wrote a cycle of nine tenebrae lessons, but only the three he composed for Holy Thursday survive. He composed a series of concerts subtitled “tastes reunited” which blended French and Italian styles, and included pieces such as “The Mysterious Barricades” in his four books of harpsichord works, which he divided into twenty-seven “orders.” A suite named for this composer includes a forlane and a rigadoun among six pieces dedicated to soldiers killed during World War I. He composed trio sonatas paying tribute to Corelli and Lully, and became known as “le grand” to distinguish him from other musicians in his family. For 10 points, name this French Baroque composer, the subject of a “tombeau” by Maurice Ravel.

ANSWER: François Couperin

13. The final stanza of one of these poems exclaims “if we could only find our own a strip of fruitful land between river and stone” after questioning “weren't you amazed by the caution of human gesture on Attic gravestones?” One of these poems asks “Does the cosmic space we dissolve into taste of us then?” and claims “we, when we feel, evaporate.” The opening lines of the second one invoke “almost deadly birds of the soul” before wondering “Where are the days of Tobias.” The first of these poems observes that “we are not really at home in our interpreted world” and calls beauty “the beginning of terror that we are just able to endure.” Their author claimed that he was inspired to write them after taking a walk along seaside cliffs and hearing a voice say “Who, if I cried out, would hear me among the angelic orders?” Written while their author was staying at the title castle, for 10 points, name this group of ten poems by Rainer Maria Rilke.

ANSWER: the Duino Elegies

14. This book's fifth chapter cites a then-recent work by Alexander Nehamas to help explain that "what one is" means "whom one turned oneself into in the course of creating the taste by which one ended up judging oneself." This book defines a descriptive language which, if questioned, leaves its user with no non-circular recourse, which it calls a "final vocabulary," and claims that in writing "Envois," Derrida did for the history of philosophy what Proust did for himself. Its final section is dedicated to discussions of books about cruelty and includes a chapter about Nabokov titled "The Barber of Kasbeam." Offering Heidegger and Nietzsche as philosophical examples of one title attitude, this work argues that both selfhood and language are historically determined and that the third title concept consists of extending "our sense of 'we' to people whom we have previously thought of as 'they.'" For 10 points, identify this philosophical work by Richard Rorty.

ANSWER: **Contingency, Irony, and Solidarity**

15. During this war, one side launched a series of amphibious landings called Operation Albion. One nation left this conflict under the Foscari Armistice. Operation First Punch was an offensive that led to one treaty signed during this war. This conflict saw brutal conditions during the six month siege of Przemyśl, and an early battle in this war ironically saw a general named Paul von Rennenkampf lose to a German army. The so-called "Great Retreat" followed this war's Gorlice-Tarnow Offensive, which ended with one side in firm control of Galicia and caused the Tsar to personally take control of the army. General Alexsei Brusilov launched a failed offensive during this war. Early in this war, Russia suffered major defeats at the Masurian Lakes and Tannenberg. For 10 points, name this major war whose Eastern Front ended with the Treaty of Brest-Litovsk.

ANSWER: **World War I** [or the **Great War**]

16. In a novella named for one of these figures, the orphan Aubrey falls in love with the uneducated Greek girl Ianthe after traveling to Rome with Lord Ruthven. Another of these figures titles a novella in which General Spielsdorf describes the circumstances of his niece Bertha Reinfeldt's death to the narrator, Laura. In a Theophile Gautier short story about one of these figures, Romauld recounts how he fell in love with the courtesan Clarimonde. The final story in the collection *In a Glass Darkly* follows one of these figures named Mircalla Karnstein. A classic story about them was popularly credited to Lord Byron, but actually written by John Polidori. One of these figures sails on the Russian ship *Demeter* in order to reach London. Sheridan Le Fanu wrote about a lesbian one in *Carmilla*, prefiguring a novel about one that pursues Lucy Westenra. For 10 points, name this type of being hunted by Dr. Abraham Van Helsing in Bram Stoker's novel *Dracula*.

ANSWER: **vampires**

17. A state park along the river with this name is named for Raymond R. "Andy" Guest. That park houses Herbert Hoover's Rapidan Camp and is traversed by Skyline Drive. The valley with this name is at the center of controversy over the proposed widening of Interstate 81, which provides the main north-south transit through it and parallels the old Valley Turnpike. The singer of a folk song about the river with this name is "bound away across the wide Missouri" and vows not to deceive this river, whose daughter he loves. The valley with this name supplied wheat to the Confederacy and was the site of a successful 1862 campaign by Stonewall Jackson before the Union struck back in an 1864 campaign by Philip Sheridan. For 10 points, give this common name of a national park, a valley between the Allegheny and Blue Ridge Mountains and a tributary of the Potomac in Virginia.

ANSWER: **Shenandoah** [accept any answer with Shenandoah; prompt on Potomac before "national park"]

18. This man's father attempted to undermine the senate following Sulla's resignation, resulting in a failed rebellion. Immediately after his first praetorship, this man served two years as governor of Nearer Spain and at the end of his career lived in the city of Circeii. As a commander, this man captured the cities of Lilybaeum and Messana, which had joined the rebellion of Sextus Pompeius. Along with Munatius Plancus, this man served as Consul during the Philippi Campaign, and this man was initially Master of the Horse during Caesar's final dictatorship. Under one agreement, this man was to control Spain and Africa, but his demand to control Sicily caused him to be stripped of all power except the title Pontifex Maximus. For 10 points, name this man who formed Second Triumvirate along with Octavian and Antony.

ANSWER: Marcus Aemilius **Lepidus** [do not accept "Lepidus the Younger"]

19. Inserting a time-exponential ansatz into this relation and solving results in a factor of the form  $e^{-i E_n t / \hbar}$  to the quantity  $\langle \psi | \hat{H} | \psi \rangle$ , divided by  $\hbar$ , which gives the time dependence of the  $n$ th state. To account for the effects of a magnetic field, the usual square term on the left-hand side of this equation must be amended by subtracting charge times vector potential and dotting the result with the vector of Pauli matrices; the left-hand side of this equation usually contains a term of  $-\hbar^2 \nabla^2$  representing the square of the momentum operator. For 10 points, what is this equation underlying the wave picture of quantum mechanics and having the wave function as its solution?

ANSWER: the (time-dependent) **Schrödinger** equation

20. One work named for this figure includes thin-necked lions at the corner of each pediment and an acroter decorated with woman-headed eagles. That temple-shaped sarcophagus containing King Abdalonymos depicts this figure hunting lions with a gardener and was discovered at the Royal Necropolis in Sidon. Although his arms are now missing, this figure once drove a chariot in a sculpture by Leochares known as the Rondanini portrait. A Roman copy of a commissioned depiction of this figure is known as the *Azara herm*. Plutarch praised the "poise of the neck turned slightly to the left" captured by the creator of the original work, Lysippos. The Tower of Babel can be seen in the background of a painting of one of this man's victories; that painting also contains a crescent moon in the top left and was painted by Albrecht Altdorfer. For 10 points, name this general, victorious in *The Battle of Issus*.

ANSWER: **Alexander** the Great [or **Alexander** III of Macedon]

## Bonuses

1. Identify the following artists who have created paintings of the apocalypse, for 10 points each.

[10] Nude figures take shelter under green and yellow cloths as a man in blue waves his arms in the air in this artist's *The Opening of the Fifth Seal*. He also painted a notable *View of Toledo*.

ANSWER: **El Greco** [or Doménikos **Theotokópoulos**]

[10] This man's *Last Judgment Triptych*, where Jesus sits on a rainbow above an armored angel, was once stolen by the privateer Paul Benecke. This German-born artist of the Flemish Renaissance also created the *Shrine of St. Ursula*.

ANSWER: Hans **Memling** [or Hans **Memlinc**]

[10] This artist from Cortona created the confusing *School of Pan* and a series of works for the Chapel of the Madonna di San Brizio including the *Preaching of the Antichrist* and the *Damned Consigned to Hell*.

ANSWER: Luca **Signorelli**

2. This organization is named for Ronald Reagan's press secretary, who was paralyzed in the 1981 assassination attempt. For 10 points each:

[10] Name this prominent gun control advocacy group.

ANSWER: **Brady Campaign** to Prevent Gun Violence

[10] This state, led by Governor John Hickenlooper, is one of several to have passed new gun control laws in the wake of the Newton, CT school shooting.

ANSWER: **Colorado**

[10] In response to the shooting, the NRA launched this program, which ended up publishing a report promoting the arming of school staff.

ANSWER: National **School Shield**

3. In bulk semiconductors, an applied electric field causes a change in the valence band maximum, resulting in a change in absorption as the wavelength of the fundamental absorption edge shifts. For 10 points each:

[10] Name the effect thus caused by the leakage of wavefunctions out of the valence band. It does not require a quantum well, but only a bulk semiconductor.

ANSWER: the **Franz-Keldysh** effect

[10] The wavefunctions of the electrons and holes in the Franz-Keldysh effect take on this form, solutions to the differential equation  $y\text{-double-prime} - x\text{-}y = 0$ .

ANSWER: **Airy** functions [prompt on **A** or **B**]

[10] The Franz-Keldysh effect occurs in uniform media, unlike the quantum-confined form of this other effect. This is the splitting of spectral lines in an electric field. It has an AC version named for Autler and Townes.

ANSWER: the **Stark** effect

4. This man led a 60,000-strong invasion force into Ethiopia, which helped prompt the British to send Kirchner against him. For 10 points each:

[10] Name this man who led Rebel Sudan after the death of the Mahdi.

ANSWER: The **Khalifa** [or **Abdullah ibn Mohammad**; or **Abdullah al-Taaisha**]

[10] The Khalifa was crushed at this 1898 battle on the outskirts of Khartoum. The Fashoda Incident took place thereafter.

ANSWER: Battle of **Omdurman**

[10] The Battle of Omdurman was set up by the British victory at this previous battle, fought six months later at a spot where the namesake river flows into the Nile.

ANSWER: Battle of **Atbara**

5. Many of these productions were based on adaptations by George Aiken and Henry Conway, who introduced the heroic character Penetrates Partyside. For 10 points each:

[10] Name these popular 19th century productions, which often converted the lawyer Marks into a comic character and used blackface to portray Topsy.

ANSWER: **Tom shows** [or equivalents such as popular **performances of Uncle Tom's Cabin** or **plays of Uncle Tom's Cabin**]

[10] Tom shows usually diluted Harriet Beecher Stowe's anti-slavery message to focus on the tragic death of this daughter of Augustine St. Clare.

ANSWER: Little **Eva** [or **Evangeline** St. Clare]

[10] Tom shows also frequently included elements of minstrelsy, which was popularized by this 19th century comedian who imitated a crippled slave to create the blackface character Jim Crow.

ANSWER: Thomas "Daddy" **Rice**

6. In this technique, a droplet undergoes Coulomb fission once it reaches its Rayleigh limit, for 10 points each:

[10] Name this technique used in mass spectroscopy in which an applied potential causes the formation of a fine aerosol containing the sample.

ANSWER: **Electrospray ionization**

[10] ESI and MALDI are considered this sort of ionization technique which produces relatively few fragment ions, making these methods more suitable for the analysis of large biomolecules.

ANSWER: **soft** ionization techniques

[10] This method of ionization involves mixing the analyte into a liquid matrix material, then hitting it with a high-energy beam of neutral atoms such as xenon to generate molecular ions.

ANSWER: **fast atom bombardment** [or **FAB**]

7. In one scene in this play, Chiron and Demetrius murder Bassianus in order to rape his betrothed, Lavinia. For 10 points each:

[10] Name this Shakespeare play which chronicles a cycle of revenge between Tamora, Queen of the Goths, and the title Roman general.

ANSWER: **Titus Andronicus**

[10] In this other play, the ghost of Don Andrea and a spirit of revenge serve as the chorus, and remain onstage the entire time. Its fourth and final act climaxes with a bloody performance of *Soliman and Perseda*.

ANSWER: *The* **Spanish Tragedy**

[10] Another play-within-a-play appears in this comedy by Francis Beaumont, which begins with a grocer interrupting the prologue of *The London Merchant* and forcing his apprentice Rafe onstage.

ANSWER: *The* **Knight of the Burning Pestle**

8. The Saville Report denied that the opening shots of this event were fired by Edward Heath's government, for 10 points each:

[10] Name this 1972 event in the Bogside neighborhood of Londonderry, in which 26 unarmed protestors were shot by the British Army. It shares its name with many other massacres, including one in Russia.

ANSWER: **Bloody Sunday**

[10] Many victims of Bloody Sunday were members of this group, which organized non-violent protests in Northern Ireland during the 60's and 70's.

ANSWER: **Northern Ireland Civil Rights Association** [or **NICRA**]

[10] Many Northern Irish Protestant groups use this colorful symbol, which appears on the flag and seal of Ulster and dates back to ancient times.

ANSWER: **Red Hand** of Ulster

9. This deity is predicted to ride around on a winged horse killing thieves by the millions with his weapon, Asi. For 10 points each:

[10] Name this cleansing god of Hindu mythology. His name translates from Sanskrit as “White Horse.”

ANSWER: **Kalki**

[10] The arrival of Kalki will end a period of time characterized by discord and apathy and named for Kali. Such periods are known by this name.

ANSWER: **Yugas**

[10] The beginning of the current Kali Yuga is dated to late January or early February, 3000 BCE, the date that figure ascended to heaven.

ANSWER: **Krishna**

10. One character in this novel exclaims “All for each and each for all!” as he fights for Greek independence. For 10 points each:

[10] Name this novel, which consists of a series of letters addressed to Bellarmin and the title character’s beloved, Diotima. Brahms set it to music in his “Song of Destiny.”

ANSWER: **Hyperion**

[10] *Hyperion* was written by this German Romantic poet of “Patmos” and “Bread and Wine.”

ANSWER: Friedrich **Holderlin**

[10] This English Romantic poet, a contemporary of Holderlin, never finished his epic poem *Hyperion*. He also wrote odes “on Melancholy” and “to Psyche.”

ANSWER: John **Keats**

11. After this battle, the losing commander Prince Hohenlohe was pursued back into Prussia, where he was surrounded and captured. For 10 points each:

[10] Name this crushing 1806 victory for Napoleon over Frederick William III. Clausewitz and Hegel both witnessed this battle and wrote books inspired by it.

ANSWER: Battle of **Jena** [accept Battle of **Jena-Auerstadt**, but do not accept Auerstadt by itself]

[10] While Napoleon fought the battle of Jena, this French general simultaneously fought and won the Battle of Auerstadt, where the Prussian force was actually larger.

ANSWER: Louis Nicolas **Davout**

[10] Two days after Jena-Auerstadt, Napoleon captured this German city, which was home to an unsuccessful 1850 attempt to create a union of German states.

ANSWER: **Erfurt**

12. For 10 points each, answer the following about free jazz.

[10] This free jazz artist pioneered the concept of space music, and claimed to be an angel from Saturn. His discography is among the largest in music history, and includes such albums as *Secrets of the Sun* and *Space is the Place*.

ANSWER: **Sun Ra** [or Herman Poole **Blount**; or **Le Sony’r Ra**; or **Le Sonra**; or **Sonny Lee**]

[10] An important pioneer of free jazz was this influential post-bop double bassist known for his allegedly fearsome temper. He composed *Pithecanthropus Erectus* and “Goodbye Pork Pie Hat.”

ANSWER: Charles **Mingus** Jr.

[10] This excellent Mingus album was partially written as a ballet, and is broken into six movements with names such as Solo Dancer and Group Dancers. He recorded it after he was released from the Bellevue psychiatric ward in 1963.

ANSWER: *The* **Black Saint and the Sinner Lady**



13. This process has been correlated with success as an invasive species and biflagellate sperm in the genus it most famously occurs in, *Corbicula* clams. For 10 points each:

[10] Name this process that discards the egg during syngamy, passing on only clonal sperm and allowing unisexual males to act as genomic parasites of related species. It can be induced *in vitro* in the pollen of moonflowers.

ANSWER: **androgenesis** [DON'T READ THESE PROMPTABLE ANSWERS OUT LOUD but prompt on **asexual** reproduction or **paternal apomixis** or **uniparental** reproduction or **parthenogenetic** reproduction or word forms]

[10] Androgenesis is an example of this type of reproduction practiced by bdelloid rotifers and parthenogenetic skinks. Populations that undergo this form of reproduction accumulate harmful mutations according to Muller's ratchet.

ANSWER: **asexual** reproduction [accept word forms; accept **uniparental** reproduction; antiprompt on specific types]

[10] In contrast to hemiclonal and automictic variants, this form of asexual reproduction involves the suppression of meiosis so offspring are maternal clones. It is contrasted with vegetative reproduction in angiosperms.

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

14. Name some things about Scientology, none of which is Lord Xenu. For 10 points each:

[10] The basic concept of Scientology is that people have this kind of life force within them that is reborn each time an individual dies. Scientologists measure their "level" of this force.

ANSWER: **thetans**

[10] As part of Dianetics, Scientologists undergo this type of counseling with a bureaucratic name, where they are attached to an E-Meter device, which helps them clear their minds and remember past lives.

ANSWER: **auditing**

[10] Scientologists with a Thetan level of 8 or higher are invited for training on board this cruise ship, which is owned by the Church of Scientology.

ANSWER: **Freewinds**

15. A stolen relic of Muhammad brings disaster to everyone who finds it in this author's short story "The Prophet's Hair." For 10 points each:

[10] Name this author, who included a story about the childhood of Hamlet, "Yorick," in his collection *East, West*. In 2012, he released the memoir *Joseph Anton*.

ANSWER: Salman **Rushdie**

[10] Rushdie began using the pen name Joseph Anton after writing this novel about Gibreel Farishta and Saladin Chamcha. Its account of the life of Muhammad led Ayatollah Khomeini to issue a fatwa decreeing Rushdie's death.

ANSWER: *The* **Satanic Verses**

[10] *East, West* also includes this short story, which is bookended by the assassinations of Indira Gandhi and Rajiv Gandhi. Its two title characters are expatriate Indians in Great Britain who give themselves nicknames from *Star Trek*.

ANSWER: **"Chekov and Zulu"**

16. For 10 points each, name these orchestral works which feature the English horn.

[10] The English horn plays a prominent solo in the second movement Largo of this symphony by Dvorak, which has more in common with Bohemian folk music than indigenous American melodies despite its title.

ANSWER: Symphony no. 9 [or *From the New World*]

[10] This tone poem includes an English horn theme representing a caravan, as well as pizzicato passages in the strings representing the plodding of hooves. It begins with a sustained solo high E in the violins suggesting a desolate landscape.

ANSWER: *In the Steppes of Central Asia*

[10] Two English horns unusually replace the oboes in this early E-flat major symphony by Haydn. Its first movement Adagio features a dispute between the English horns and French horns.

ANSWER: Symphony No. 22 in E-flat Major [or the Philosopher; or Il Filosofo; or Der Philosoph]

17. Michelle Alexander attacked the racial disparity in incarceration rates as a result of this campaign in *The New Jim Crow*. For 10 points each:

[10] Name this campaign initiated in a 1971 Nixon speech. Other aspects of this campaign included Nancy Reagan's slogan "Just Say No" and efforts to infiltrate the Medellin cartel.

ANSWER: War on Drugs

[10] In 1989, the War on Drugs was just as a justification for this military operation, which overthrew Manuel Noriega in Panama.

ANSWER: Operation Just Cause

[10] This drug cartel, founded by former commandos from the Mexican Army, is currently active along the Gulf Coast of Mexico. It is notable for its use of technology and its attacks on civilians.

ANSWER: Los Zetas

18. Sometimes considered a companion to *The Revolt of the Masses*, this book focuses on the interplay of generations in history; it includes chapters like "Fifteenth-Century Man," "Renaissance and Return," and "The Idea of the Generation." For 10 points each:

[10] Name this Ortega y Gasset book which, as its Spanish title suggests, asks why a certain seventeenth-century scientist interests us.

ANSWER: *Man and Crisis* [or *About Galileo* or *En Torno A Galileo*]

[10] Ortega y Gasset was ambiguous about being labeled an existentialist; conversely, this philosopher actively rejected the label Existentialist. He penned *Absurd Man*, *Absurd Reasoning* and *Absurd Creation*, and wrote an essay concluding "One must imagine Sisyphus happy."

ANSWER: Albert Camus

[10] This later French philosopher once speculated what Camus might say after giving a review of *La Peste*, not knowing Camus was in fact the audience. This thinker's phenomenological approach to hermeneutics can be seen in his *Interpretation Theory*, a follow-up to his study of Freud.

ANSWER: Paul Ricoeur

19. A pre-amplifier may increase the signal-to-noise ratio of this component, which has a "time-stretch" variant in optical systems. For 10 points each:

[10] Name this electronic component that samples a signal in order to discretize it.

ANSWER: analog-to-digital converter

[10] Amplification named for this Indian Nobel laureate may be used to overcome large losses in all-optical ADC. Such a process is analogous to this scientist's namesake inelastic scattering of photons.

ANSWER: Sir Chandrasekhara Venkata Raman

[10] Time-stretch optical ADC is usually done on this type of waveform. One of these will result from a free-running laser with a pulsed output beam, as opposed to a q-switched device

ANSWER: continuous wave

20. The financial accelerator model suggests that problems in the real economy occur due to increased frictions in credit channels. For 10 points each:

[10] Important contributions to the financial accelerator model were made by this American economist, a frequent collaborator with Mark Gertler and the current chairman of the Federal Reserve.

ANSWER: Ben Shalom **Bernanke**

[10] Bernanke and Gertler pioneered the use of this approach from contract theory in the analysis of credit markets. This approach was developed by Robert Townsend, and suggests that the namesake inefficiencies arise because the entrepreneur has better information about a business than the investor.

ANSWER: **costly state verification** [or **auditing costs**; or **agency costs**]

[10] In his 2010 speech to the AEA, Bernanke critiqued this economist's eponymous rule for inflation rate targeting, which states that the federal funds interest rate should be a function of inflation and the output gap.

ANSWER: John **Taylor**